

**THE VALIDATION OF A TEST BATTERY FOR THE SELECTION OF CALL CENTRE
OPERATORS IN A COMMUNICATIONS COMPANY**

by

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DECLARATION

Student number: 35-95-1222

I declare that “The Validation of a Test Battery for the selection of Call Centre Operators in a Communications Company” is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE
(M.L. NICHOLLS)

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DATE

TABLE OF CONTENTS	PAGE
ACKNOWLEDGEMENTS	ii
DECLARATION	iii
LIST OF TABLES	xi
LIST OF FIGURES	xiii
SUMMARY	xiv
CHAPTER 1: SCIENTIFIC OVERVIEW OF THE RESEARCH	1
1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH	1
1.2 PROBLEM STATEMENT	4
1.3 AIMS OF THE RESEARCH	6
1.3.1 General aim	6
1.3.2 Specific aims	6
1.4 THE PARADIGM PERSPECTIVE	7
1.4.1 Applicable psychological paradigms	7
1.4.1.1 The positivist stance	7
1.4.1.2 The behaviouristic paradigm	8
1.4.1.3 The functionalist paradigm	8
1.4.2 Research dimensions	9
1.4.3 The disciplinary relationship	10
1.4.4 Applicable concepts	10

1.5 RESEARCH DESIGN	11
1.5.1 Variables	12
1.6 RESEARCH METHODOLOGY	13
1.6.1 Literature review	13
1.6.2 Empirical study	14
1.7 CHAPTER ALLOCATION	15
1.8 CHAPTER SUMMARY	15
CHAPTER 2: VALIDATION OF SELECTION INSTRUMENTS	16
2.1 SELECTION	16
2.1.1 Selection process	17
2.1.1.1 Analysing the job	19
2.1.2 Selection tools	24
2.1.2.1 Psychometric testing	25
2.2 VALIDATION OF ASSESSMENT TOOLS	28
2.2.1 Types of validation studies	31
2.2.1.1 Criterion-related validity	31
2.2.1.2 Content validity	34
2.2.1.3 Construct validity	35
2.3 INTEGRATION	36
REMARK	37
2.4 CHAPTER SUMMARY	38

CHAPTER 3: PERFORMANCE MANAGEMENT	39
3.1 JOB PERFORMANCE AS A MANAGEMENT TOOL	39
3.1.1 Performance management defined	41
3.1.2 Performance management systems	42
3.1.3 Performance management considerations	44
3.2 JOB PERFORMANCE MEASUREMENT	45
3.2.1 Performance measurement in Call Centres	46
3.2.2 Types of performance measures	49
3.2.3 Performance evaluation	50
3.2.3.1 Potential errors in performance rating	52
3.3 JOB PERFORMANCE AND TEST VALIDATION	53
3.3.1 Performance measures in test validation	55
REMARK	57
INTEGRATION	58
REMARK	60
3.4 CHAPTER SUMMARY	60
CHAPTER 4: EMPIRICAL STUDY	61
4.1 AIM OF THE EMPIRICAL STUDY	61
4.2 POPULATION AND SAMPLE	61
4.3 MEASUREMENT OF BIOGRAPHICAL INFORMATION	63

4.4 INDEPENDENT VARIABLE MEASURE	63
4.4.1 Customer Contact Styles Questionnaire	65
4.4.1.1 Description and aim of the instrument	65
4.4.1.2 Administration of the instrument	67
4.4.1.3 Reliability and validity of the instrument	67
4.4.1.4 Justification for selection of the instrument	68
4.4.2 Basic Checking	68
4.4.2.1 Description and aim of the instrument	68
4.4.2.2 Administration of the instrument	69
4.4.2.3 Reliability and validity of the instrument	69
4.4.2.4 Justification for selection of the instrument	69
4.4.3 Audio Checking	70
4.4.3.1 Description and aim of the instrument	70
4.4.3.2 Administration of the instrument	70
4.4.3.3 Reliability and validity of the instrument	71
4.4.3.4 Justification for selection of the instrument	71
4.5 DEPENDENT VARIABLE MEASURE	71
4.5.1 Description and aim of the instrument	72
4.5.2 Administration of the instrument	73
4.5.3 Reliability and validity of the instrument	73
4.5.4 Justification for selection of the instrument	74
4.6 ADDITIONAL CRITERION MEASURES	74
4.6.1 Average Call Handling Time	76
4.6.2 Quality	77
4.7 DATA GATHERING PROCEDURE	77
4.7.1 Main criterion data	78
4.7.2 Additional criterion data	78
4.7.3 Predictor data	79

4.8 DATA PROCESSING	79
4.8.1 Descriptive statistics	79
4.8.2 Correlations	80
4.8.3 Multiple regression	81
4.8.4 Statistical significance	82
4.9 RESEARCH HYPOTHESES	83
REMARK	85
4.10 CHAPTER SUMMARY	85
CHAPTER 5: RESULTS	86
5.1 DESCRIPTIVE STATISTICS	86
5.1.1 Biographic information of the sample	86
5.1.2 Descriptive statistics for the predictors	88
5.1.2.1 Descriptive statistics for the CCSQ7.2	88
5.1.2.2 Descriptive statistics for the ability tests	89
5.1.3 Descriptive statistics for the criteria	90
5.2 CORRELATION RESULTS	93
5.2.1 Intercorrelations	93
5.2.1.1 Intercorrelations for predictors	93
5.2.1.2 Intercorrelations for criteria	95
5.2.2 Correlations	100
5.2.2.1 Correlation between CCCI behavioural criteria and predictors	100
5.2.2.2 Correlation between performance data and predictors	103
5.2.2.3 Correlation between criteria and biographic data	104

5.3 REGRESSION ANALYSIS	108
5.3.1 Regression for dependent variable: Relating to Customers	108
5.3.2 Regression for dependent variable: Convincing	109
5.3.3 Regression for dependent variable: Communicating Orally	109
5.3.4 Regression for dependent variable: Quality Orientation	110
5.3.5 Regression for dependent variable: Customer Focus	111
5.3.6 Regression for dependent variable: Team Working	111
5.3.7 Regression for dependent variable: Results Driven	112
5.3.8 Regression for dependent variable: Fact Finding	113
5.3.9 Regression for dependent variable: Average Quality	113
5.3.10 Regression for dependent variable: Average Call Handling Time	114
5.4 INTEGRATION OF RESULTS	115
5.4.1 The personality predictor	115
5.4.2 The ability tests predictor	116
5.4.3 The test battery	118
5.4.4 Extraneous variable effect	118
REMARK	119
5.5 CHAPTER SUMMARY	119
CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS	120
6.1 INTERPRETATION OF RESEARCH RESULTS	120
6.2 CONCLUSIONS	123
6.3 LIMITATIONS OF THE RESEARCH	125
6.3.1 Limitations of the literature review	126
6.3.2 Limitations of the empirical study	126

6.4 RECOMMENDATIONS FOR FUTURE RESEARCH	128
6.5 CHAPTER SUMMARY	128
REFERENCES	129
APPENDIX 1. JOB PROFILE – OPERATOR	140
APPENDIX 2. CUSTOMER CONTACT STYLES QUESTIONNAIRE SCALE DESCRIPTIONS	142
APPENDIX 3. CUSTOMER CONTACT COMPETENCY INVENTORY DEFINITIONS	144
APPENDIX 4. RATER BRIEFING DOCUMENT	146
APPENDIX 5. INTERNAL OPERATOR QUALITY ASSESSMENT QUESTIONNAIRE	158

LIST OF TABLES	PAGE
Table 1. Strategic changes to performance management	44
Table 2. Operator job competency ranking (in order of importance)	64
Table 3. Suggested assessment methods	64
Table 4. Dimensions of the CCSQ	66
Table 5. Competencies measured by the CCCI	72
Table 6. Description of operator performance measures	75
Table 7. Operator performance targets	76
Table 8. Gender and race distribution of sample (N=140)	86
Table 9. Education level of sample (N=140)	87
Table 10. Age, length of service and time in current position in years for sample (N=140)	87
Table 11. Geographical information of sample (N=140)	88
Table 12. Means, standard deviations, minimums, maximums and alpha coefficients for the CCSQ7.2 (N=140)	89
Table 13. Means, standard deviations, minimums, maximums and alpha coefficients for the ability tests (N=140)	90
Table 14. Means, standard deviations, minimums, maximums and alpha coefficients for CCCI competencies (N=140)	91
Table 15. Sample size, means, standard deviations, minimums and maximums for Average Call Handling Time	92
Table 16. Sample size, means, standard deviations, minimums and maximums for Quality	92
Table 17. Intercorrelations for CCSQ7.2 (N=140)	94
Table 18. Intercorrelations for CP7.1 and CP8.1 (N=140)	95
Table 19. Intercorrelations for CCCI (N=140)	96
Table 20. Intercorrelations for Average Call Handling Time	98
Table 21. Intercorrelations for Quality	99
Table 22. Correlations between CCCI behavioural criteria and predictors (N=140)	101

Table 23. Correlations between performance data and predictors	103
Table 24. Correlations between criteria and biographic data	105
Table 25. Partialled correlations between criteria and biographic data	106
Table 26. Regression summary for dependent variable: Relating to Customers	108
Table 27. Regression summary for dependent variable: Convincing	109
Table 28. Regression summary for dependent variable: Communicating Orally	110
Table 29. Regression summary for dependent variable: Quality Orientation	110
Table 30. Regression summary for dependent variable: Customer Focus	111
Table 31. Regression summary for dependent variable: Team Working	112
Table 32. Regression summary for dependent variable: Results Driven	112
Table 33. Regression summary for dependent variable: Fact Finding	113
Table 34. Regression summary for dependent variable: Average Quality	114
Table 35. Regression summary for dependent variable: Average Call Handling Time	114

LIST OF FIGURES

PAGE

Figure 1. Typical selection process	18
Figure 2. Relationship between job analysis, reliability and validity	30
Figure 3. Process for predictive validation	33
Figure 4. Process for concurrent validation	34
Figure 5. The human resource process	40
Figure 6. Elements of a performance management system	43

SUMMARY

THE VALIDATION OF A TEST BATTERY FOR THE SELECTION OF CALL CENTRE OPERATORS IN A COMMUNICATIONS COMPANY

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The purpose of the research was to determine whether personality and measures of ability would significantly predict job performance of call centre operators in a South African communications company. The Customer Contact Styles Questionnaire (CCSQ7.2), the Basic Checking (CP7.1) ability test and the Audio Checking (CP8.1) ability test were completed by operators as the predictors. Supervisors completed the Customer Contact Competency Inventory (CCCI) for 140 operators as a measure of job performance. Performance statistics were obtained for the sample as additional criterion data. Correlations and multiple regression analysis revealed statistically significant small to moderate correlations between the criteria and the predictors.

The research was conducted from a concurrent validity perspective. Further research from a predictive validity perspective is suggested in order to substantiate the findings and to improve the generalisability thereof.

Key terms:

selection, validation, psychometric testing, personality assessment, ability assessment, concurrent validity, call centre, job analysis, job description, job specification

CHAPTER 1

SCIENTIFIC OVERVIEW OF THE RESEARCH

In this chapter, the background and motivation for the research will be discussed. The problem statement and aims will be presented as well as the paradigm perspective, research design and broad methodology. In concluding this chapter, the contents will be summarised and an outline of the chapters to follow will be given.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The world of work is changing. Rapid advancements in technology, electronics and the use of data have contributed to the globalisation of organisations (Hall & Mirvis, 1995; Lamprecht, 2002; Rodriguez & De Pablos, 2002). This has increased competition and resulted in a need for sharpened organisational efficiency (Baruch, 1999; Furnham, 2000; Lamprecht, 2002).

Service has become a business focus and is promoted as a key ingredient in distinguishing an organisation from its competitors (Clegg, 2000; Menday, 1996; Read, 2000). Customer service is not merely about the products or services that an organisation offers, but looks more specifically at how the service is delivered (Clegg, 2000). Organisations are learning that customer service and customer relations are critical for generating and retaining business and revenue (Bodin & Dawson, 1999).

Call centres have emerged as one response to this changing world of work and the need to improve efficiency and customer service delivery. These centres offer versatility (Read, 2000) and present a means to provide quick and efficient service (Bodin & Dawson, 1999). Call centres aid customer service delivery in a competitive environment and assist in consolidating customer service business operations (Anton, 2000; Zapf, Isic, Bechtoldt & Blau, 2003). A strong emphasis on service and sales is therefore evident.

A call centre can be defined as “a place where calls are placed, or received, in high volume for the purposes of sales, marketing, customer service, telemarketing, technical support or other specialized business activity” (Bodin & Dawson, 1999, p.45). Call centres are found in most industries and practical examples include help desks, reservations desks, service centres and telemarketing bureaus.

Call centres place the customer in direct telephonic contact with an organisation representative and offer potential advantages in managing costs and increasing customer service (Anton, 2000). Effective management of the centre and selection of the right centre staff are critical to call centre success (Els & De Villiers, 2000; Levin, 2001; Phelps, 2002). Besides the positive link to customer service (Clegg, 2000), the selection of the right personnel can potentially reduce absenteeism and turnover (O’Hara, 2001). Benefits of limiting absenteeism and turnover include providing more consistent customer service, greater customer satisfaction and reduced costs associated with replacement recruitment, selection and training. Selection of the right personnel is a critical business practice.

Finding and selecting the right call centre candidates however presents a business challenge (Levin, 2001). A large number of candidates are available in the market but the selection of the appropriate candidates is not always easy (O’Hara, 2001). Improved selection strategies are needed to aid the identification and selection of the right candidates and selection instruments are suggested as one way to aid this decision-making process (Els & De Villiers, 2000; Phelps, 2002).

A variety of selection instruments are available ranging from structured interviews, biographic data, role plays, case studies and tests. Tests serve as a technique or measuring device to quantify behaviour or to assist in the understanding or prediction thereof (Kaplan & Saccuzzo, 2001). Tests have a role to play in decision making (Foxcroft, 1997) and require consideration.

South Africa is promoted internationally as an ideal destination for the placement of call centres. Considerably lower costs, the availability of labour, a sound telecommunications infrastructure and a stable political and economic climate contribute to the country's marketability. Consequently there has been a sharp increase in the number of call centres being established within the country and increased employment opportunities for call centre operators (GEDA, 2005). To operate within South African borders, however, requires adherence to South African labour legislation. The Employment Equity Act (No.55 of 1998) governs the use of assessments and provides the legal boundaries for all assessment and assessment-related practices. Validity, reliability, fairness, lack of bias and job-relatedness are critical elements highlighted in this legislation.

Validity is regarded as the most important consideration for any selection procedure or device (PAI, 2005; Schultz & Schultz, 1998). Tests or selection tools should measure what they intend to measure. A number of types of validity are reported to assist in this regard including content validity, construct validity, face validity and criterion-related validity (see Schultz & Schultz, 1998 or Statt, 2004; for explanations of types of validity). Criterion-related validity forms the basis of most validation studies. It focuses on the relationship between test scores and job performance (Schultz & Schultz, 1998). Criterion-related validity can be tested from two positions, namely predictive validity or concurrent validity. A concurrent validity study is one that relates to employees already in a job and sets about correlating their test scores (Levy, 2003). A concurrent study presents advantages in that an existing pool of incumbents is available to participate in the study. But it can present some contamination in that sub-standard candidates may already have been removed from the system as a result of the selection process.

More efficient and effective selection systems are needed to identify the right staff for customer service positions as a result of their direct impact on customer relations and organisation performance. Assessments have been introduced and suggested as one method which can be utilised to enhance the selection decision-making process. Legislation requires that any instruments utilised in the assessment process need to

adhere to the aforementioned characteristics, namely validity, reliability, fairness and not resulting in bias. In order for tests to add value to the selection process they not only need to meet legislative requirements but need to assist in the prediction of future performance. Validation studies, as introduced above, are suggested as one approach to assist in this regard.

1.2 PROBLEM STATEMENT

Given the above considerations it is evident that call centres are largely dependent on their operators in terms of call centre performance and this places great pressure on the selection of the right candidates. Identification of the right candidates, however, presents a challenge in that no single perfect method exists. The challenge of the identification of the right call centre staff is the pillar on which this research is based.

Tools are needed to aid the selection decision-making process and assessments are one suggested medium to assist. In order to ensure their value-added and continued use, however, assessments need to prove their predictive power and link to job performance. This confirmation needs to take place within the ambits of assessment-related legislative frameworks.

The organisation in which the research takes place currently makes use of assessments (a personality questionnaire and two ability tests) as part of its selection process for call centre operators. This is in an attempt to improve selection decision-making. These assessments have however not been tested within the organisation to determine their relationship to operator job performance. Confirmation is needed that the Customer Contact Styles Questionnaire (CCSQ) and the Personnel Test Battery Basic Checking and Audio Checking tests are reliable and valid for predicting on-the-job performance of call centre operators in the communications industry.

“Since the defining factor in the effectiveness of an organization is the quality of its human resources, any procedure which can assist in making better selection decisions

is of immense benefit" (Lowery, Beadles & Krilowicz, 2004, p.304). Herein lies one of the benefits of the research. The research will not only add to the existing body of call centre knowledge but can assist the organisation in critically assessing the effectiveness of its selection decisions and strategy.

Huysamen (2002) highlights that ongoing research of assessment tools within the South Africa context is necessary. The research will further aid this need and will build on the existing body of assessment research and literature within the South African organisational context.

Based on the presented discussions, the following research questions have been formulated:

- What are selection, job analysis, psychometric testing and validity?
- What role does personality assessment play in predicting work performance?
- What role does ability assessment play in predicting work performance?
- What are performance management, measurement and evaluation and what role do they play in test validation?
- What is the link between selection, performance and validation?
- Do the scores of the Customer Contact Styles Questionnaire (CCSQ) correlate with job performance?
- Do the scores of the Basic Checking (CP7.1) ability test correlate with job performance?
- Do the scores of the Audio Checking (CP8.1) ability test correlate with job performance?
- Can a test battery for the selection of call centre operators be utilised to predict job performance?
- What are the moderating effects of the extraneous variables of race, gender, age, education level, length of service and time in current position?

1.3 AIMS OF THE RESEARCH

The aims for this research are presented below:

1.3.1 General aim

The general aim of the research is to validate a test battery for the selection of call centre operators within a communications company.

1.3.2 Specific aims

The following aims are formulated for the literature review:

1. To conceptualise selection, job analysis, psychometric testing and validity.
2. To conceptualise the use of personality and ability assessments in predicting work performance.
3. To conceptualise performance management, measurement and evaluation and its role in test validation.
4. To integrate the aspects of selection, performance and validation.

The following aims are formulated for the empirical study:

1. To determine the correlation between the Customer Contact Styles Questionnaire raw scores and operator job performance.
2. To determine the correlation between the Basic Checking ability test raw scores and operator job performance.
3. To determine the correlation between the Audio Checking ability test raw scores and operator job performance.
4. To evaluate whether a test battery for the selection of call centre operators can be utilised as a predictor of job performance.

5. To determine the moderating effects of the extraneous variables of race, gender, age, education level, length of service and time in current position.

1.4 THE PARADIGM PERSPECTIVE

The research paradigm, dimensions, disciplinary relationship and meta-theoretical assumptions are discussed below.

The research is conducted within the social sciences. Research in this field can be described as “a collaborative human activity in which social reality is studied objectively with the aim of gaining a valid understanding of it” (Mouton & Marais, 1990, p.7). Within the various social science disciplines, researchers function from a certain perspective. This perspective is known as a paradigm.

A research paradigm can be described as “the underlying set of beliefs about how the elements of the research area fit together and how we can enquire of it and make meaning of our discoveries” (Wisker, 2001, p.122). Bailey (1987, p.24) describes a paradigm as “a perspective or frame of reference for viewing the social world, consisting of a set of concepts and assumptions”. A paradigm shapes the researcher’s thinking and interpretation and influences the research design. The researcher’s paradigm therefore requires consideration.

1.4.1 Applicable psychological paradigms

1.4.1.1 The positivist stance

The researcher will adopt a natural science approach to psychology and will function from an empirical and positivist stance (Giorgi, 1970). According to this stance, only direct observable behaviour can be studied (Meyer, Moore & Viljoen, 1990) and the focus is on relationships and correlation (Babbie & Mouton, 2001) and explaining and predicting (Huysamen, 1994). In terms of this approach the research follows a scientific

methodology which begins with problem identification. The identified problem is analysed and hypotheses are formulated and subsequently tested through the research process (Allison & Race, 2004; Bryman, 1995). Two paradigms that are shaped by the positivist stance, namely the behaviouristic paradigm and functionalist paradigm, will be adopted in the research and are discussed below.

1.4.1.2 The behaviouristic paradigm

The literature research will be conducted from a behavioural paradigm. Behaviourism adopts a strict scientific view and is based on the principles of empiricism and positivism (Meyer, Moore & Viljoen, 2002). Behaviourism is defined as “atomistic in character and cognitive in orientation” (Knapp, 1963, p.153). The behaviouristic paradigm has its roots in classical conditioning and is concerned with stimulus and response interactions. As reported by Meyer et al. (1990) the behaviouristic paradigm therefore has a number of basic premises including:

- Empiricism (environmental experience)
- Positivism (scientific study approach)
- Atomism (individual experience)
- Associationism (association of two activities, experiences or events)

In terms of this paradigm, only observable behaviour is studied. Behaviour is seen as consisting of two parts, namely a stimulus and a response, which are associated through learning (Meyer et al., 1990). In the research, individual behaviour is observed based on job performance as a response to the organisation environment. Behaviour is explained reductionally and the goal is to predict and control (Meyer et al., 2002).

1.4.1.3 The functionalist paradigm

The empirical phase of the research is quantitative and is conducted from a functionalist paradigm. It is suggested that the functionalist paradigm is largely shaped by the

positivist approach (Bryman, 1995). Within this paradigm the researcher focuses on cause and effect relationships between variables and on explaining these relationships. A functionalist paradigm is used in social research and is based on the following assumptions:

- that society has a systemic nature that is geared towards order;
- that one considers the role of the individual within this society; and
- that behaviour of the individual is bound to the context of society and the social relationships therein (Morgan, 1980).

The functionalist paradigm is pragmatic by nature and tends to adopt a problem-oriented approach in which rational explanations and practical solutions are sought (Burrell & Morgan, 1979). The functionalist paradigm is widely used in empirical studies and is useful in explaining a phenomenon. It focuses on the value the phenomena can add (Bailey, 1987) and was therefore identified as the applicable paradigm for the research. In terms of this approach, the researcher will adopt a detached and objective view (Morgan, 1980; Terre Blanche & Durrheim, 2002) and will approach the research from a scientific frame of reference. From this stance, events, interactions and linkages are viewed as logical and logical conclusions are drawn (Wisker, 2001). The research will further be conducted with the understanding that relationships can be identified, studied and measured (Burrell & Morgan, 1979).

1.4.2 Research dimensions

The aforementioned definition of social science research offered by Mouton and Marais (1990) highlights the sociological (collaborative nature), ontological (social reality), teleological (aiding understanding), epistemological (valid and reliable) and methodological (objective) dimensions of this type of research.

From the ontological dimension the unit of analysis for the research is the individual. From the teleological dimension, the research has theoretical goals and aims to

describe a relationship between two phenomena (test performance and job performance). From the epistemological dimension the research endeavours to adhere to strict validity and reliability expectations. The methodological dimension for this research is shaped by the research paradigm.

1.4.3 The disciplinary relationship

The research is planned within the broad field of psychology. Psychology can be defined as “the scientific study of behaviour” (Muchinsky, Kriek & Schreuder, 1998, p.1). This definition highlights the scientific foundation of the field. Science by nature is an objective approach and deals with observable and verifiable facts that can be measured and recorded (Schultz & Schultz, 1998).

Industrial psychology deals specifically with the study of human behaviour within a work context (Weitten & Lloyd, 2003) and forms the discipline for the research. Personnel psychology forms part of the study of industrial psychology and deals with “individual differences in behaviour and job performance and with measuring and predicting such differences” (Cascio, 1991, p.2). The research focuses on addressing an organisational activity using methods from the psychometrics field. Psychometrics forms the sub-discipline from which the research is conducted. Psychometrics relates to psychological testing and measures in all forms (Statt, 2004).

1.4.4 Applicable concepts

As metatheoretical concepts in this research, definitions are presented for selection battery and validity.

A selection battery can be defined as “a set of predictors, or tests, that are used to make employee hiring decisions” (Levy, 2003, p.176). The ability to assess or determine how well a candidate is likely to perform on a job is the purpose of any selection method (Statt, 2004).

Validity refers to the “agreement between a test score or measure and the quality it is believed to measure” (Kaplan & Saccuzzo, 2001, p.132). There are many different types of validity including face validity, content validity, construct validity and two types of criterion-validity, namely predictive and concurrent validity (Aiken, 2000; Kaplan & Saccuzzo, 2001; McIntire & Miller, 2000). When utilising tests in decision making the criterion-related forms of validity, namely predictive validity and concurrent validity, are normally considered in that researchers want an indication of how the tests predict certain behaviours (McIntire & Miller, 2000).

This research will focus on concurrent validity. In terms of this measure of validity the evidence for the validity (in this instance, the raw test scores) and the criterion (the criterion-questionnaire results) are considered simultaneously.

1.5 RESEARCH DESIGN

Research design relates to the planning and structuring of research so as to obtain the most valid findings. Research design relates largely to decision-making which impacts the research question, formulating the research problem, conceptualising and actioning the research, collecting the research data and analysing and interpreting the results (Mouton & Marais, 1990).

Research design entails consideration of the measurement of the research variables (Bailey, 1987). Durrheim (2002a) suggests that the following dimensions be considered in selecting the appropriate research design: the purpose of the research, the paradigm perspective, the research context and the techniques utilised to gather and process research data.

The research takes the form of a descriptive study with the researcher setting out to describe the relationship that exists between the dependent and independent variable. The researcher’s main goal in a descriptive study is to describe accurately the relationship between two phenomena (Mouton & Marais, 1990). The word ‘accurate’

should not be underplayed. Descriptive studies require accurate observations and issues of validity, reliability and sample representivity are critical elements in research design (Durrheim, 2002a).

A quantitative approach will be adopted in this research. The quantitative approach is described as “that approach to research in the social sciences that is more highly formalised as well as more explicitly controlled, with a range that is more exactly defined, and which in terms of the methods used, is relatively close to the physical sciences” (Mouton & Marais, 1990, p.155). By nature, quantitative research involves measurement. It focuses on causality with a view to making generalisations and is geared towards replication and verification (Bryman, 1995). Quantitative research entails the gathering of data in numbers and the statistical analysis thereof. Results of these data analyses are used to make generalisations (Durrheim, 2002a).

The research is conducted by way of a correlation study with a view to determining concurrent validity. In this type of design predictor and criterion data are obtained simultaneously in an effort to determine the relationship to job performance (PAI, 2005). A correlation study is conducted on the variables using statistical methods to test the stated hypotheses.

In line with the Guidelines for the Validation and Use of Assessment Procedures for the Workplace (PAI, 2005, p.9) the following research design components will receive due consideration in the research: “measurement reliability and validity, representative samples, appropriate analysis techniques, and controls over plausible confounding factors”.

1.5.1 Variables

A descriptive study aims to describe the relationship between two phenomena. These phenomena are known as variables. The independent variable relates to the

“antecedent phenomenon” whilst the dependent variable relates to the “consequent phenomenon” (Mouton & Marais, 1990, p. 130).

The results of the test battery are the independent variable for the research and consist of the results from the Customer Contact Styles Questionnaire and the Basic Checking and Audio Checking ability tests. The dependent variable is on-the-job performance as measured by the Customer Contact Competency Inventory (CCCI).

Additional variables such as race, gender and age may have an influencing effect on results but are not aspects which the researcher is able to manipulate or avoid. These can be referred to as extraneous or organismic variables (Mouton & Marais, 1990). These variables will be considered statistically to determine their effect.

1.6 RESEARCH METHODOLOGY

The research methodology for this research can be divided along two lines, the literature review and the empirical study.

1.6.1 Literature review

The literature review will be conducted in order to provide a conceptual framework from which to plan and organise the research and interpret results. The literature review will entail obtaining recent and relevant literature and the presentation of this material in a qualitative manner. Steps to be covered in the literature review include:

Step 1. Contextualising and understanding selection with specific reference to the definition, the process and the role of job analysis.

Step 2. Discussing and defining psychometric testing and the use of tests in the prediction of job performance.

Step 3. Conceptualising and contextualising the validation of assessment tools with specific reference to understanding the legal requirements and the different types of validation studies.

Step 4. Providing a conceptual framework that enables an understanding of the importance of performance management and measurement, specifically within a call centre environment.

1.6.2 Empirical study

The empirical study is quantitative by nature and is presented in the form of a descriptive correlation study. The steps to be covered in the empirical study are:

Step 1. Defining the population and sample

Step 2. Outlining the measurement of biographic variables

Step 3. Outlining the measurement of criterion data

Step 4. Describing the data gathering process

Step 5. Describing data processing

Step 6. Formulating and reflecting on the research hypotheses

Step 7. Reporting and interpreting research results

Step 8. Formulating conclusions

Step 9. Detailing research limitations

Step 10. Formulating recommendations

1.7 CHAPTER ALLOCATION

The chapters of the research will be presented as follows:

Chapter 2 Validation of selection instruments

Chapter 3 Performance management

Chapter 4 Empirical study

Chapter 5 Results

Chapter 6 Conclusion, limitations and recommendations

1.8 CHAPTER SUMMARY

In this chapter, the background to and motivation for the research were discussed and the problem statement identified. The general and specific aims of the research and research paradigms were presented. Research design and broad methodology were discussed and an outline of chapters was provided. In Chapter 2 that follows, selection and the validation of selection tools are discussed.

CHAPTER 2

VALIDATION OF SELECTION INSTRUMENTS

In this chapter selection is discussed. The validation of selection instruments with specific reference to psychometric testing is the focal point of this discussion. Legal requirements as well as the use of personality and ability assessment in the selection decision-making process are presented. The chapter concludes with a summary of the main discussions.

2.1 SELECTION

As the active component in turning business processes and practices into customer satisfying services, people are cornerstone to organisation functioning and survival. Employees can be the competitive edge that organisations need to succeed. The challenge for organisations is thus to identify and fully utilise the resources at hand (Amos, Ristow & Ristow, 2004). This places the spotlight on the practices of employee selection and performance management. Selection will centre the discussions in this chapter. Performance management will be the focus of discussion in Chapter 3 that follows.

Identification and selection of the right personnel is a critical business activity. Poor selection is not only expensive but can be detrimental to organisation functioning and can negatively impact the organisation's ability to compete. In the race to succeed and achieve, organisations need to ensure that they are selecting the right people to do the job. It has become critical to ensure that selection processes are effective.

Selection is the process of identifying the most suitable candidate to perform a specific job from a pool of candidates obtained in the recruitment phase (Amos et al., 2004). It is in essence a matching exercise whereby an organisation sets out to find the best possible match of person to job. The process is driven by pre-set criteria based on the

job and the type of person ideally suited to the job. These criteria need to be carefully and accurately mapped and will ensure that the organisation will identify a person that will be able to effectively perform the job.

The ability to source and evaluate the right candidates with the right skills and attributes is the main goal of personnel selection methods and practices (Robertson & Smith, 2001). Identification of the right skills and attributes is critical to organisation performance and success. The main function of the selection process can be seen as matching knowledge, skills, abilities and other personal characteristics to job requirements (Borman, Hanson & Hedge, 1997).

Amos et al. (2004) suggest a number of guidelines or elements for an effective selection system. These include a clear selection policy, fair processes, legal compliance, thorough analysis of the job, identification and understanding of appropriate recruitment and selection criterion, fair assessment methods, trained selectors and follow up processes to determine and assess the effectiveness of the selection process and decision-making.

These guidelines highlight important considerations and components of the process and form the basis of the discussions to follow. The selection process, job analysis, identification of selection criterion, selection tools, legal compliance and validation of tools will be presented below.

2.1.1 Selection process

A typical selection process is depicted in Figure 1. The steps highlight a range of the more common activities found in a selection process. The order and inclusion of activities is determined by the organisation. The individual process steps are relatively mechanistic. In reflecting on this process it is evident that the individual steps do not, in isolation, serve to identify the best possible match for the job.

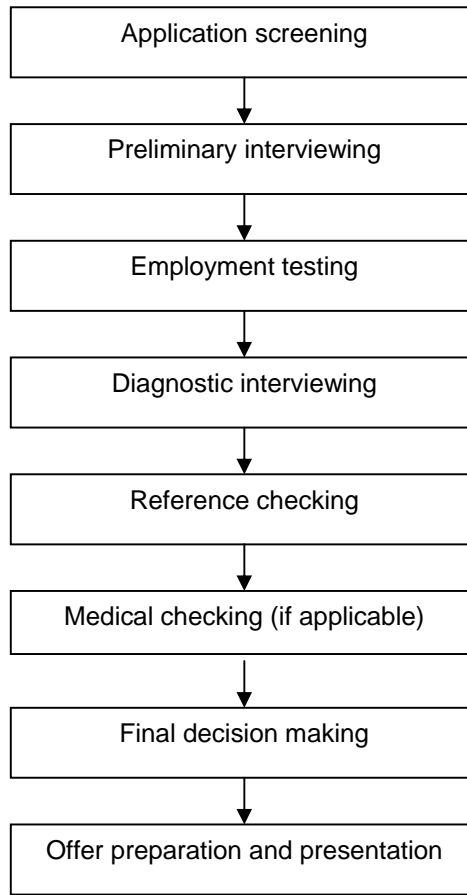


Figure 1. Typical selection process (Byars & Rue, 2006, p.136).

O'Hara (2001) suggests that the recruitment and selection process should be detailed as follows:

- Step 1. Analysing the job
- Step 2. Skill and competencies requirements
- Step 3. Performance description
- Step 4. Compiling a job description
- Step 5. Identifying potential candidates and devising a recruitment plan
- Step 6. Defining and implementing the selection process

Through this process, a clear and accurate understanding of the job becomes key to the selection process that follows. The process steps suggested in Figure 1 by Byars and

Rue (2006) could ideally slot in at step 6 of the above (O'Hara, 2001) selection process steps.

As presented in the aforementioned process steps (O'Hara, 2001) the starting point in the selection process is a detailed analysis of the job. Byars and Rue (2006) share this sentiment and highlight that the starting point in the selection of resources for an organisation needs to be a thorough understanding and accurate description of the work that needs to be done and how it should be done. By understanding the position and detailing the job parameters, a clear depiction of what will make a good match will be evident (Read, 2000). Job analysis is one of the methods suggested to assist in this regard.

Job analysis identifies the skills and abilities needed for the position and their relative importance and contributes to a more objective comparison of candidates (Byars & Rue, 2006). Job analysis has a crucial role to fulfil in order to gain a full and clear understanding of the type of person that will fit into the position and to guide the selection of the right employees (Borman et al., 1997; Byars & Rue, 2006; Els & De Villiers, 2000; Statt, 2004).

2.1.1.1 Analysing the job

A focus on human resource development, the need for problem solving and changes in technology, work practices, culture and employment legislation have brought about a focused need for accurate job analysis (Pearn & Kandola, 1993). The need to fully understand a job, what it entails and the type of person characteristics associated with success in carrying out the job are more critical now than ever.

Job analysis forms the core of most human resource activities and can serve a number of functions. Job analysis is key to recruitment, selection, orientation, training and development, career development and counselling, health and safety, performance management and compensation (Byars & Rue, 2006). Specifically from a selection

perspective, job analysis can increase the accuracy of selection criteria as a result of the detailed and accurate study of the job and what it entails (Pearn & Kandola, 1993).

Two of the main purposes of job analysis which relate specifically to selection include helping to develop appropriate and applicable selection processes and helping to highlight criterion measures (PAI, 2005). These purposes will be of particular relevance to this research.

Job analysis is defined as “the study of a job to describe in specific terms the nature of the component tasks performed by the worker” (Schultz & Schultz, 1998, p.74) and “the process by which management systematically investigates the tasks, duties and responsibilities of the jobs within an organisation” (Grobler, Warnich, Carrell, Elbert & Hatfield, 2006, p.150).

The above definitions reflect the task requirements of a job. Borman et al. (1997) highlight that it has become increasingly apparent that job performance relates not only to ability but also to personal traits and dispositional factors. Job analysis therefore needs to focus not only on job tasks, duties and responsibilities but also on the interpersonal requirements of the job (Goodstein & Lanyon, 1999).

Job analysis is the process of comprehensively studying the job to determine what it entails. Byars and Rue (2006, p.64) share that “it involves determining the tasks that comprise the job and the skills, knowledge, abilities and responsibilities required of the holder for successful job performance”. This definition includes reference to both the task and person requirements of the position.

Job analysis results in two outputs, namely a job description and a job specification. A job description is a written description of the job and what it entails (Byars & Rue, 2006). The job description outlines the job tasks, duties and responsibilities and serves as a guide for the recruitment and selection process going forward (Statt, 2004). In summarising, a job description could be seen as relating to all the technical aspects of

the job – the job title, job summary, job duties, tasks and outputs. A job specification deals with the person aspects of the job. Education or qualification background, skills, knowledge and ability are included here (Amos et al., 2004). In layman human resources terms, the job description could be associated with the *hard* issues whilst the job specification would have a more *soft* issues focus.

Amos et al. (2004, p.30) highlight that the “content and context of the job should serve as the basis for recruiting and selecting the most suitable candidate for the job”. Both the job description and job specification therefore have a role to play in guiding the selection process and the identification of the best possible match for a position.

Various methods are available to analyse the job. These include observation, interviews (structured and unstructured), self descriptions or diaries, critical incident technique, repertory grid, checklists or inventories, hierarchical task analysis, position analysis questionnaire and the work profiling system (see Pearn & Kandola, 1993; for detailed explanation of methods). These methods differ in their orientation, sophistication, structure, quantification and application. The work profiling system will be discussed below.

The Work Profiling System (WPS) is a structured job analysis technique developed by SHL (Pearn & Kandola, 1993). The WPS consists of three separate job analysis questionnaires which pertain to different occupational categories, namely:

- managerial or professional
- administrative or service
- technical or manual.

The questionnaire has two component parts. The first part relates to the job’s main tasks. The second part considers the context in which the job is performed (Pearn & Kandola, 1993). The process entails meeting with and briefing respondents.

Respondents complete the questionnaire and a validation interview follows to validate the information gathered.

To make this job analysis method more user-friendly, respondents use a card system to identify sections of the work that are relevant to their job. Through this process approximately 10 sections of work are identified. The respondents then rate the questionnaire items for these sections on an analysis form. Time spent and importance of the activity are rated for each item. Data are then validated via a validation interview and forwarded to the development company, SHL, for processing (Pearn & Kandola, 1993).

The report generated from this method highlights the following:

- an analysis of the sections
- an analysis of the tasks
- an analysis of the attributes, and
- appropriate assessment measures.

Additional reports are available including job description, job specification, interview formats and more (Pearn & Kandola, 1993).

Pearn and Kandola (1993) report on the benefits of the WPS method as follows:

- the method benefits from the use of technology
- it is easy to use
- different questionnaires are used for different categories of jobs
- a self-report option is available
- many report options are available
- experience the benefit of both respondent and analyst input through questionnaire completion and validation interview.

A number of potential pitfalls are experienced in the job analysis process. Common pitfalls include a lack of top management support, the dependence on a single medium for data gathering, the need for the involvement of both supervisor and jobholder, insufficient time allocation and distortion of activities (Byars & Rue, 2006).

The main pitfall of the WPS method is the omission of cards. The cards selected by the respondent represent the main sections of work. The identified sections shape the parts of the questionnaire that are completed. Omitting a relevant section could result in a serious omission from the results and descriptions that follow (Pearn & Kandola, 1993).

Traditionally jobs have been profiled, a job description has been drawn up listing the duties and the job specification has detailed the person-requirements. Job descriptions are quite static by nature and in some instances have been found to fail in reflecting the constant change that is taking place in organisations and the job. Continual updating of job descriptions is an administrative, time and cost challenge organisations have to face. To be effective, however, job descriptions require constant updating (Grobler et al., 2006).

In response to the above challenges the changing business environment has seen a move towards job profiles. Job profiles are more flexible than traditional job descriptions and describe the job by way of outputs rather than specific tasks and duties. By nature, job profiles allow more movement and flow. Job profiles can be used effectively in the selection and performance management processes (Amos et al., 2004).

In looking to the future Amos et al. (2004) highlight that it is no longer merely sufficient to have knowledge of a job and what it entails. In the competitive business environment in which organisations function, standards are needed against these job outputs and to this end job analysis forms a link to performance management. The link to performance management will be discussed further in Chapter 3.

2.1.2 Selection tools

The objective of selection is to identify a person who can successfully perform the job (Byars & Rue, 2006). The core purpose of the selection process is therefore to observe and evaluate those factors that serve as predictors of job success. A predictor can be defined as “an aid to decision-making applied in the context of selection or other personnel decisions” (PAI, 2005, p.12).

Selection relates to selecting the best person for the job. Selection entails judgement in terms of fit. No one-stop method is available and certainly no perfect method has been identified. Many methods are in operation and most are subjective. Objective tools are however available to aid in increasing the validity of selection decision-making (Grobler et al., 2006).

In the selection process, information is gathered through selection tools and compared against the pre-set criteria for the job to aid the decision-making process (Amos et al., 2004). Curriculum vitae, application forms, reference checking and computer literacy testing are suggested as tools to utilise in the selection process. A number of additional tools are available and can serve as predictors. These include, but are not limited to, biodata, personality inventories, interviews, work samples, assessment centres, simulations and performance ratings (PAI, 2005; Statt, 2004). Sets of tests or predictors are often grouped and are referred to as a selection battery. A selection battery is described as a grouping of selection tools that are utilised to aid the employee selection and decision-making process (Levy, 2003).

Different types of tests and assessments are available to enhance the selection process and aid decision-making. Some of the more commonly used tests include aptitude tests, psychomotor tests, job knowledge tests, interests, polygraph tests and graphology or hand-writing tests (Byars & Rue, 2006).

Two types of tests will be at the centre of the discussions in this research, namely ability tests and personality tests. Ability tests deal with mental capacity whilst personality tests deal with the overt and covert dispositions of the individual. Ability tests provide a measure of speed and/or accuracy whilst personality tests deal with measuring typical or preferred behaviour (Kaplan & Saccuzzo, 2001).

2.1.2.1 Psychometric testing

Tests can be utilised in the selection process to measure certain attributes quantitatively, for example verbal reasoning. Personality tests can assist in gathering more qualitative data in terms of the individual's preferred style (Menday, 1996). Tests are often grouped and used to predict one criterion, for example performance. This is known as a test battery (Anastasi, 1988). An example of a test battery could include a personality measure (to measure the affective or non-intellectual component of an individual) as well as a number of special aptitude tests (to measure specific skills and abilities).

Testing relates to behaviour measurement and is one of the core elements of the broader field of psychological assessment. Tools have been developed to assist in the attempt to assess (or measure) human behaviour. These tools are commonly known as tests, instruments or assessment measures. A test is an objective measure to gather data about an individual for a set purpose (Foxcroft & Roodt, 2001). A specific focus with these tools is their scientific properties in terms of their validity and reliability. These concepts will be discussed at a later stage.

Tests help to differentiate between people, either by measuring the differences between individuals or by revealing differences in individuals' reactions. With this differentiating capacity, tests can assist in the selection process. The predictive value of tests (and by default in turn, their value-add to the selection process) lies in the degree to which they depict a significant broader behaviour requirement (for a selection process, job

performance). The value-add of testing in the selection process therefore lies in the ability of the test to predict future job performance (Anastasi, 1988).

- *Personality assessment*

Jobs, as is evident in job specification, differ in terms of their person requirements. To add value, personality measures need to consider and reflect these differences (Goodstein & Lanyon, 1999). Personality refers to an individual's relatively consistent pattern of behavioural traits (Weitten & Lloyd, 2003). Personality assessment specifically deals with behaviour from a non-intellectual or affective stance (Anastasi, 1988). It considers elements such as "emotional states, interpersonal relations, motivation, interests and aptitudes" (Anastasi, 1988, p.17). A personality test can therefore be defined as an "objective and standardized measure of a sample of behavior" (Anastasi, 1988, p.23).

The use of personality in the selection of personnel was previously met with reservation. Little evidence was available in terms of the ability of personality to predict job performance. This view, however, changed over the last decade and a number of meta-analytic studies assisted by highlighting the predictive capability of personality measures and showed support for the inclusion of personality assessment in the selection process (McIntire & Miller, 2000; Robertson & Smith, 2001).

Research studies by Barrick and Mount (1991), Goodstein and Lanyon (1999), Hertz and Donovan (2000), Mount and Barrick (1998) and Stewart and Carson (1995) highlighted support for the use of personality as an effective predictor of performance, more especially when the big five approach to personality is utilised. These studies show a strong link between the trait of Conscientiousness and performance and have assisted in consolidating literature in this regard. These studies concur that personality assessment has proven its place in employee selection.

Through Barrick and Mount's (1991) meta-analytic study it was highlighted that Conscientiousness specifically served as the most consistent predictor of job success. Extraversion was a further predictor but this was more likely when associated with occupations such as management and sales. Through these findings it was evident that both content and context of a job require due consideration. Personality showed predictive validity for a job context of interpersonal nature. The interpersonal component of the managerial, customer services and sales-related occupations could also possibly account for the validities found in these areas.

Lowery, Beadles and Krilowicz (2004) highlight that the selection of resources for an organisation is of such a critical nature that even in instances where relatively small validities are reported, when added to the overall body of knowledge, they provide an additional source of information to explain small variance in job performance. Personality measures therefore have a role to play in the selection decision-making process.

- *Ability assessment*

The role of ability assessment has long been supported and not much debate has occurred in this domain. Of interest, however, is the role of ability assessment together with personality. Lowery et al. (2004) support the use of personality in selection and in their study added the element of cognitive ability. The study found that the combined effect of cognitive ability and personality added a significant amount ($p < .05$) of predictive power in explaining job performance. Although proven with a relatively small sample, their study highlights the interaction of personality and ability in predicting performance and provides a further enhancement in the process of employee selection.

The same conclusion has been drawn by Outtz (2002) and Wright, Kacmar, McMahan and Deleeuw (1995) in that the use of both cognitive ability as well as personality assessments would be of greater use than the use of cognitive ability alone. Previous research has thus shown that personality and performance are related with a

moderating effect of cognitive ability. Cognitive ability has a supportive role to play in the selection decision-making process.

2.2 VALIDATION OF ASSESSMENT TOOLS

Grobler et al. (2006, p.189) highlight that “the primary problem in the past was the use of very general tests for many different jobs without serious thought about their validity”. Today’s assessment practices have however tightened and legislation is largely responsible. The Employment Equity Act No.55 of 1998 (Section 8) governs the use of assessment in South Africa and sets out guidelines for its use. This legislation is quite clear and ensures that only tests or any other assessment measures may be utilised that:

- are proven to be scientifically valid and reliable,
- can be fairly applied to all, and
- are not biased against any individual or group.

The Professional Board for Psychology under the auspices of the Health Professions Council of South Africa is the governing and policing body in place to safeguard the public and the profession. The Board ensures protection of the public and adherence to assessment-related practices and decisions within South Africa. The appropriate selection and utilisation of assessment tools and instruments are therefore not only an ethical but a legal requirement incumbent on practitioners and organisations. The Act (No. 55 of 1998) has placed dedicated attention on the aspect of validity and reliability and these warrant further discussion.

Cronbach (1970, p.22) shared a timeless statement in that “the decision maker who obtains better information before making his decision will get better results”. This statement points directly to the validity and reliability of the measures used in the selection decision-making process.

Validity and reliability are important concepts for selection (Byars & Rue, 2006). Some consider validity to be the most important consideration for a selection procedure or device (Anastasi, 1988; PAI, 2005; Schultz & Schultz, 1998). In order to add value to the selection process, tests or selection tools should measure what they intend to measure, namely future success in job performance.

Validity implies that a measure measures what it is intended to measure. Technically it is described as “how accurately a criterion predictor predicts the criterion of job success” (Byars & Rue, 2006, p.144). A number of types of validity are reported including content validity, construct validity, face validity and criterion-related validity (see Schultz & Schultz, 1998 or Statt, 2004; for full explanations of types of validity). In a selection process the measure or test performance would need to predict future job performance. Empirical validity exercises to test this alignment result in a validity coefficient which provides an indication of how closely the criterion performance could have been predicted from the test scores (Anastasi, 1988).

Reliability relates to consistency of measurement (Anastasi, 1988; Wolfaardt, 2001). It is defined as “the extent to which a criterion predictor produces consistent results if repeated measurements are made” (Byars & Rue, 2006, p.144). Reliability has a role to play as it shows the error variance. It is therefore critical for the inclusion of reliability in the reporting of results for each sample (Anastasi, 1988). Reliability calculations result in a correlation coefficient which provides an indication of the extent of the relationship between the variables (Bailey, 1987).

It is important to note that it is possible for a test to be reliable without being valid. The converse is however not true. Reliability is therefore a prerequisite for validity and warrants consideration. It is however only the first step in the attempt to show validity (Byars & Rue, 2006).

Robertson and Smith (2001) share that validation entails evaluating the extent to which the personnel selection processes predict future job performance. Traditionally the

validation process has begun with the job analysis process. Job analysis is one of the most commonly used means of identifying and measuring job effectiveness. Through this method, subject matter experts discuss and agree on the relevant knowledge, skills and attributes required of a specific job (Casco, 1995). The aspect of job analysis was discussed in Section 2.1.1.1. Job analysis has a direct relationship with validity and reliability. This relationship is depicted in Figure 2.

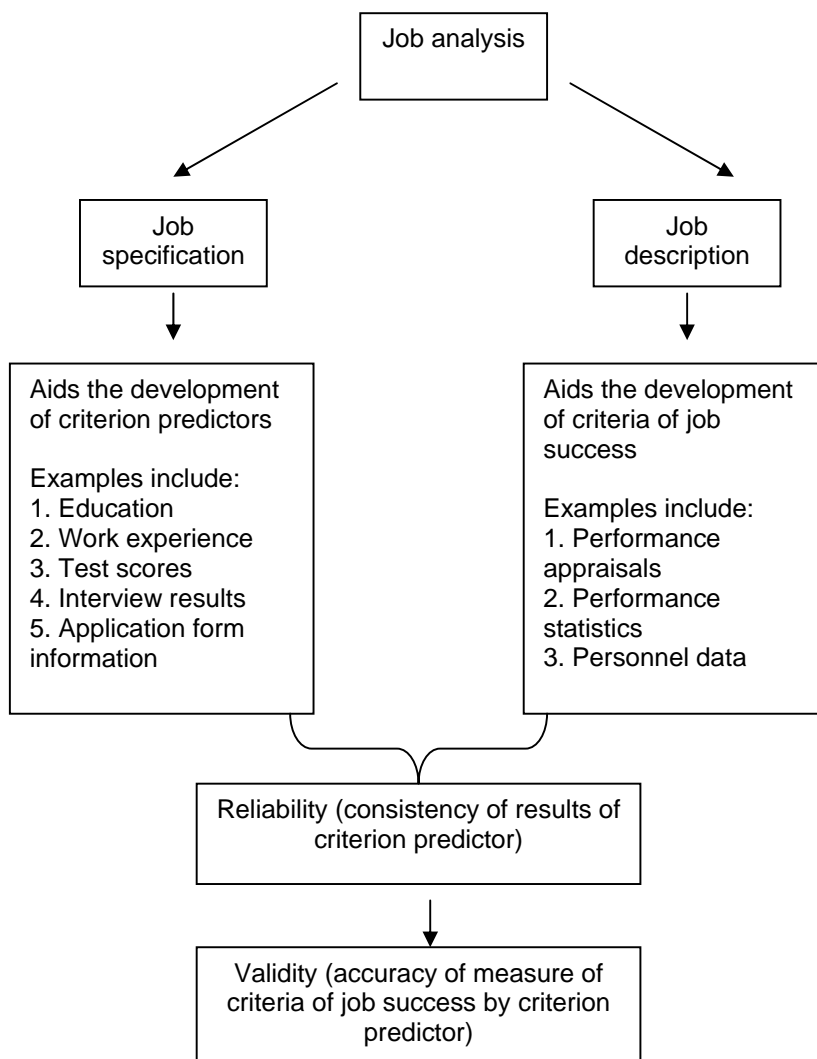


Figure 2. Relationship between job analysis, reliability and validity (Byars & Rue, 2006, p.145)

Job analysis results in a job description and a job specification. A job description helps to provide criteria of job success. These are ways of detailing the measures of successful job performance. Examples include performance appraisals, performance statistics and personnel data (Byars & Rue, 2006). A job specification assists in highlighting criterion predictors. Criterion predictors are those factors that can assist in predicting successful job performance. Examples include education, work experience and test scores (Byars & Rue, 2006).

A measure of the employee's knowledge, skills and attributes can serve as an independent variable whilst their supervisor's rating of their performance can serve as a dependent variable. Thus by conducting a correlation analysis, researchers and practitioners are empowered to determine the relative importance of each attribute to job performance.

2.2.1 Types of validation studies

There are predominantly three ways to show the validity of the criterion predictor. These include criterion-related validity, content validity and construct validity (Byars & Rue, 2006; Schultz & Schultz, 1998; Statt, 2004).

2.2.1.1 Criterion-related validity

Criterion-related validity forms the basis of most validation studies. It is a "direct and independent measure of that which the test is designed to predict" (Anastasi, 1988, p.145). Criterion-related validity is a quantitative method (Wolfaardt, 2001) and focuses on the relationship between test scores and job performance (Schultz & Schultz, 1998). These types of studies are adopted by collating data and conducting correlation analyses to determine the statistical relationship between the predictor (test results) and the criterion (work performance). The result is a correlation coefficient which represents a measure of the degree of validity (Byars & Rue, 2006).

Issues of practicality, reliability and validity guide the choice of predictors. Job performance is suggested as the most appropriate and widely used criterion measure for the validity of personality tests, general intelligence tests and special aptitude tests (Anastasi, 1988; Wolfaardt, 2001). Both objective and subjective measures of this criterion are available. Objective measures include production statistics (quality and quantity), absenteeism, costs of maintenance, waste records, training time and turnover. Subjective measures of performance include peer, supervisor or subordinate evaluations. Subjective information can be obtained via ratings, checklists, paired comparisons or forced-choice methods (Gekoski, 1964). Although subjective, ratings of performance by supervisors can be a valuable source of data for the validation process. These ratings entail judgement but may be quite appropriate to aspects such as personality where more objective data may be difficult to obtain (Anastasi, 1988).

Two potential problems can result in the contamination of data in a validation study. The first occurs when the rater becomes aware of the predictor data. In such instances, knowledge of the predictor data can influence ratings. The confidential and secure storage of predictor data is suggested to prevent this occurrence (Cronbach, 1970). The second potential problem occurs in the experience of rater errors (Anastasi, 1988). Aspects such as leniency, central tendency and halo effect can contaminate ratings. The training of raters in common rating errors is suggested to assist in curbing this problem.

Criterion-related validity can be tested from two positions, namely predictive validity or concurrent validity. As per Figure 3, a predictive validity approach is followed where the predictor (for example, the test) is administered to a pool of applicants and a selection decision is made regardless of test performance. At a later stage, test scores are correlated against job performance to determine if a relationship exists between test performance and job performance (Byars & Rue, 2006).

A predictive validity study presents a number of challenges (Byars & Rue, 2006). These include that this type of study is costly. It further results in time delays which occur by

nature of the exercise. The organisation does not have the benefit of consideration of the test results in its decision-making phase, so any potential benefit in this regard is not realised. A substantial pool of people further need to be selected in order to make an impact on the study findings.

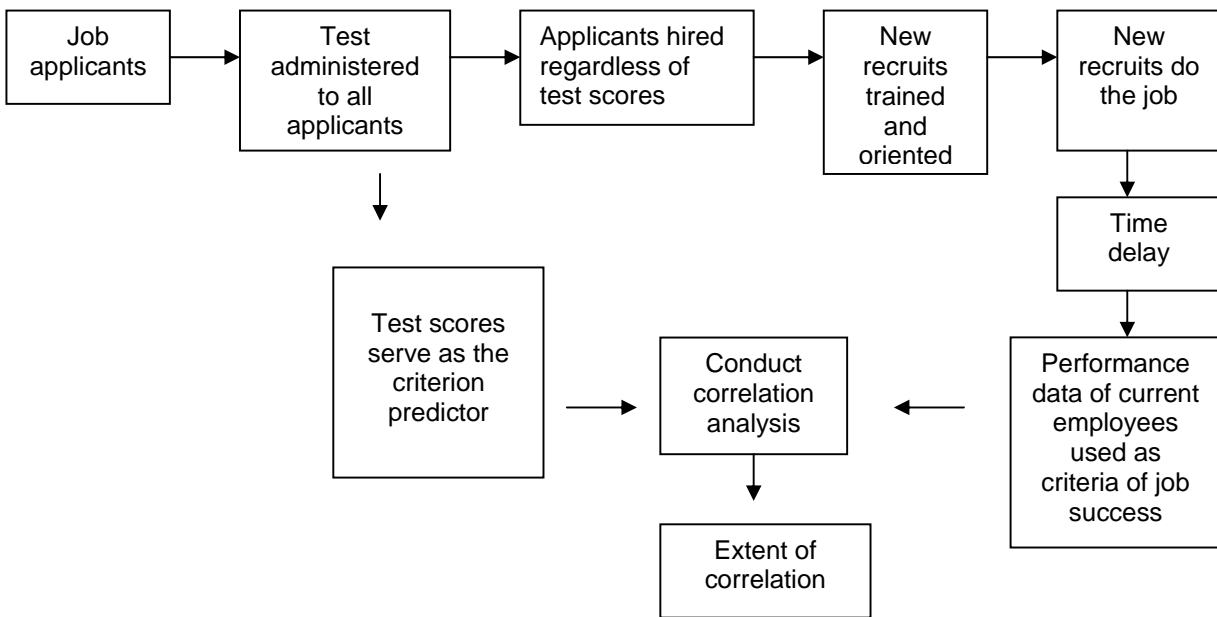


Figure 3. Process for predictive validation (Byars & Rue, 2006, p.146)

A concurrent validity study differs in that it relates to employees already in a job and sets about correlating their test scores (Levy, 2003). As presented in Figure 4, the predictor (for example, a test) is administered to current employees and these scores are correlated against current job performance. If an acceptable correlation is shown then the test can be considered for inclusion in future selection processes (Byars & Rue, 2006).

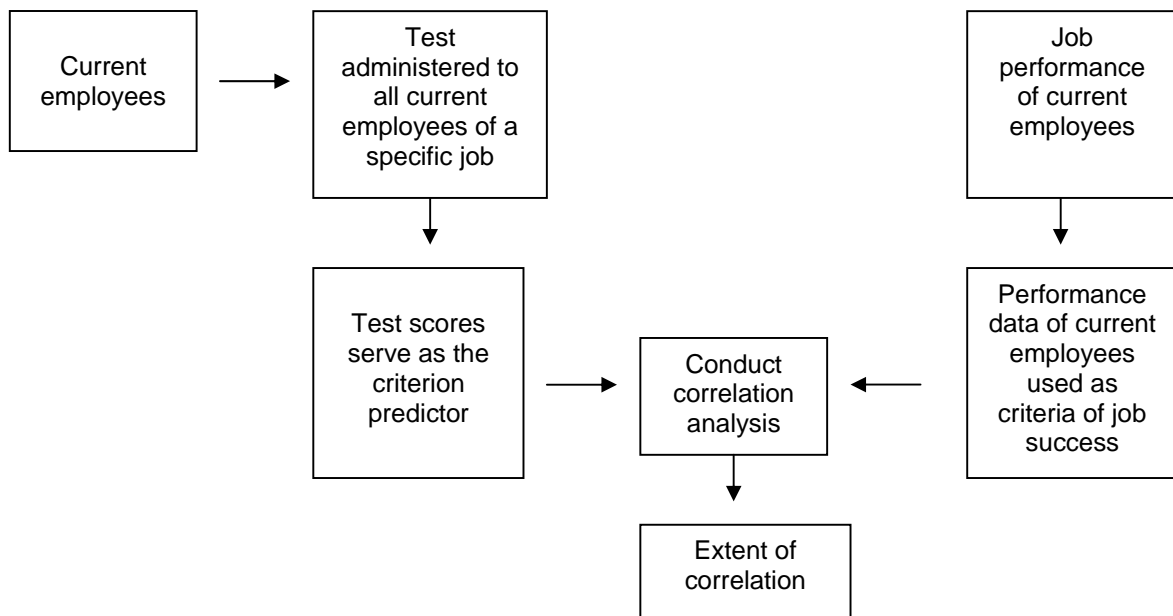


Figure 4. Process for concurrent validation (Byars & Rue, 2006, p.147)

A concurrent study presents advantages in that an existing pool of incumbents can be used to conduct the study. Disadvantages are however also at play (Byars & Rue, 2006). The study data may present some contamination in that sub-standard candidates may have been removed from the system through the selection process. Alternatively top performing candidates may have been removed through promotion. Correlation results therefore need to be interpreted with caution.

2.2.1.2 Content validity

Content validity concerns the representativity of behaviour in test content (Anastasi, 1988). It relates to the representativeness of the content of the test or instrument to the critical aspects of the job. Content validity typically depends on judgement and is normally utilised in situations where insufficient numbers justify using an empirical validation approach (Byars & Rue, 2006).

Content validity is a non-statistical evaluation of validity and is conducted by making use of a panel of experts. Content validity entails the analysis of behaviour to check that it is represented appropriately through test items. This form of validity is typically utilised in item selection in the test construction phase (Anastasi, 1988). The relevance of the content of responses to items is critical in this evaluation.

Content validity is not suggested as the best way to test validity for personality and aptitude tests. Criterion-related methods are suggested as better suited to these measures (Wolfaardt, 2001). Content validation is typically used for achievement tests and would be more appropriate to a selection situation where the test consists of an actual work sample (Anastasi, 1988). A thorough job analysis would once again be the starting point for a content validation study in an effort to identify the important parts of the job that should be reflected in the test.

2.2.1.3 Construct validity

Construct validity relates to the degree to which a test or instrument measures the extent of likeness of a candidate's characteristics to those associated with successful job performance (Byars & Rue, 2006). Wolfaardt (2001, p.3) defines construct validity as "the extent to which it measures the theoretical construct or trait it is supposed to measure".

Construct validity is more technical as it relates to theoretical constructs and traits. In order to show this type of validity it is necessary to formulate hypotheses about test performance from theory of these constructs and confirm them experimentally. This form of validation is typically drawn out and is a result of observation, consideration and imagination (Cronbach, 1970).

Most validation studies have focused on criterion-related validity. Whilst criterion-related validity is important, within the selection context, construct validity can be an additional concern (Robertson & Smith, 2001). Cognitive ability and personality testing

are generally the only two selection tools that ascribe themselves to construct measurement

In this research a criterion-related validity study will be conducted. A concurrent validity approach will be followed. In terms of this approach test scores will be correlated with measures of job performance for a sample of current job incumbents.

2.3 INTEGRATION

Great emphasis is placed on the selection of the right people with the right knowledge, skills, experience and attitude in the competitive business environment in which organisations function. Improper selection processes can result in the placement of inappropriate candidates. Improper selection can have an impact on the candidate and the organisation. Performance will suffer if the individual is unable to produce as per the job requirements. This is costly and time-consuming (Amos et al., 2004).

Conversely effective selection can have extremely positive effects for the individual and the organisation. A well selected individual will experience the achievement and fulfilment of work goals. The organisation in turn will achieve its goals and objectives by way of a performing employee. This performance focus is critical given the history of low productivity in the South African context (Grobler et al., 2006). Within the call centre environment where a positive link exists between selection of the right call centre staff and customer service (Clegg, 2000) the emphasis on effective selection is even more pronounced.

Knowledge about the job guides an effective selection process. It is critical that the traits measured through the selection process must be important for job success. If the organisation has a clear understanding of what is needed, they can set about matching individuals to the position. In order to make effective selection decisions knowledge is therefore needed about what the job requires to ensure successful performance. Job

analysis is the starting point in an effective process (Byars & Rue, 2006) and assists in highlighting the criteria for job success.

Personnel selection procedures and practices are in place to assist in predicting future job performance (PAI, 2005). Tools are available to assist in this process, specifically with regard to the measurement of the identified traits. Personality assessment and ability tests are two of the tools presented to aid in this process. Research has shown that personality and performance are related with a moderating effect of cognitive ability (Outtz, 2002; Wright et al., 1995).

Jobs are constantly changing (Robertson & Smith, 2001). Ongoing validation of selection methods and procedures is therefore critical to ensure that practices and tools measure what they intend to measure. The importance of validity and the validation process was discussed. Criterion-related validation with job performance as a predictor (Anastasi, 1988; Wolfaardt, 2001) was suggested as most appropriate for personality and aptitude measures.

In the research, a job analysis exercise assisted in identifying the core competencies for the operator position. A concurrent validation study was then conducted utilising personality and ability assessment tools as the predictors and job performance as the criteria. Validity and reliability of the instruments was firstly checked and correlations were conducted to determine if a relationship existed. Details of the empirical study and the validity of the instruments are presented in Chapter 4.

REMARK

In concluding this chapter the following theoretical aims as captured in Section 1.3.2 have been fulfilled:

- To conceptualise selection, job analysis, psychometric testing and validity. (Section 2.1, Section 2.1.1.1, Section 2.1.2.1 and Section 2.2).

- To conceptualise the use of personality and ability assessments in predicting work performance (Section 2.1.2.1).

2.4 CHAPTER SUMMARY

In this chapter, the process of selection was discussed. The role of job analysis in defining selection criteria and identifying appropriate selection measures was highlighted. The legal framework for test validation was presented and the concept of validity was discussed. The different types of validation were presented and the chapter concluded with an integration and consolidation of the discussions. In Chapter 3 that follows job performance as the criterion measure in this research is discussed.

CHAPTER 3

PERFORMANCE MANAGEMENT

In this chapter the role of performance is highlighted. The discussions centre on job performance as a management tool and to this end performance management and measurement is discussed. The role of performance in test validation is presented in order to gain an understanding of performance within the research context. The chapter concludes with an integration of the discussions.

3.1 JOB PERFORMANCE AS A MANAGEMENT TOOL

Effective management of performance is critical if organisation goals and objectives are to be achieved (Amos, Ristow & Ristow, 2004). Organisations are in business to succeed and the achievement of business strategy through individual output places the spotlight directly on performance and the management thereof.

The initial focus of this chapter will be on the management of job performance, the role it plays, systems in use and considerations in this regard. However, before delving further into job performance as a management tool, it is beneficial to establish a framework to direct these discussions. To this end a typical organisational human resource (HR) process is presented in Figure 5. The link between business strategy and performance is clearly reflected in this figure and was briefly introduced in Chapters 1 and 2. The need for this link is pivotal to the effective management of performance (Armstrong, 1993) and will be at the centre of the discussions that follow.

An integrated human resource (HR) strategy supports the fulfilment of business strategy and the attainment of organisational goals. This integrated HR strategy represents a network of human resource processes geared towards the achievement of business goals and introduces links of performance to sourcing and staffing, development, reward and recognition and employee relations.

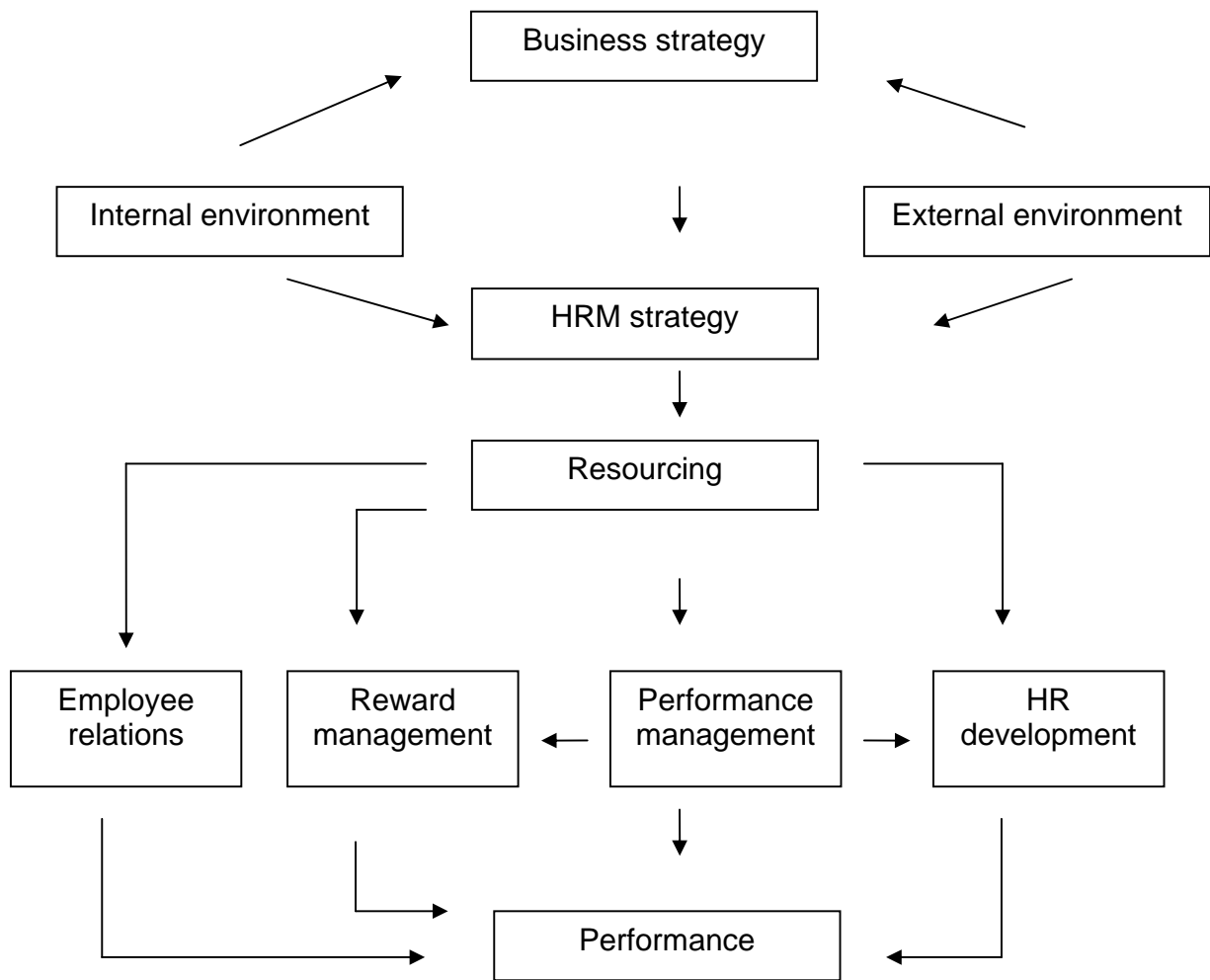


Figure 5. The human resource process (Armstrong, 1993, p.216)

As is evident in Figure 5, performance is the ultimate consideration in business and HR strategy. Performance management is one of the business tools suggested to assist in driving and managing this performance and will centre the discussions in the section that follows.

3.1.1 Performance management defined

Performance management as a concept appears relatively self explanatory. It relates to managing performance. Formally it is defined as “an interlocking set of policies and practices which have as their focus the enhanced achievement of organizational objectives through a concentration on individual performance” (Storey & Sisson, 1993, p.132). Performance management encompasses cascading overall business goals and objectives into individual employee goals and objectives. It is an approach to the management of people and deals with setting individual objectives that are related to organisation objectives (Amos et al., 2004).

Spangenberg and Theron (2001) highlight that potentially the most important organisation link for performance management is to drive the implementation and realisation of strategy. This alignment is required “so that employee performance and development are enhanced, with the aim of maximising organisational performance” (Den Hartog, Boselie & Paauwe, 2004, p.558).

The word ‘strategy’ has been referred to in the discussions thus far and it is important to ensure a shared meaning of this term given the research context. Strategy can be defined as “the means by which an organization seeks to meet its objectives” (Price, 1997, p.157). For the purpose of this research, strategy can therefore be likened to a high level thought map or plan of action of how the organisation will set out to achieve its business goals and objectives.

The central positioning of business strategy in performance management was reflected in Figure 5. Business strategy is a prerequisite for setting individual goals and objectives and is the starting point for an effective performance management system.

Delving further it is evident that performance management encompasses “the challenge organisations face in defining, measuring, and stimulating employee performance with

the ultimate goal of improving organisational performance” (Den Hartog et al., 2004, p.556).

From the above explanations it is evident that performance management relates to the co-ordination and measurement of individual performance in line with organisation goals and objectives. Critical elements include the alignment of business and individual goals, setting of measures and the evaluation of this delivery. Performance management systems assist in structuring and achieving these outputs.

3.1.2 Performance management systems

Performance management systems encompass more than merely appraising performance. They can be utilised to “communicate and reinforce the organization’s strategies, values and norms, and to integrate individual and corporate objectives” (Armstrong, 1993, p.162). In addition they can “develop employees’ understanding of what needs to be achieved; help them to improve corporate performance and reward them on the basis of their contribution” (Armstrong, 1993, p.164). Performance management systems can also help to improve organisation performance and enable individuals to develop their abilities. This can ultimately contribute to their job satisfaction (Armstrong, 1993).

The above perspectives highlight the variety of functions that performance management systems can fulfil. These include the socialisation of business objectives, creating an awareness and understanding of performance requirements, as well as the development of employees in maximising their performance, potential and satisfaction.

Performance management systems consist of a number of key elements including the alignment between overall business strategy and individual target setting, performance evaluation and associated performance-related reward and development (Storey & Sisson, 1993). These elements are reflected in Figure 6. The elements of alignment to strategy, individual measures and performance evaluation are dealt with in this chapter.

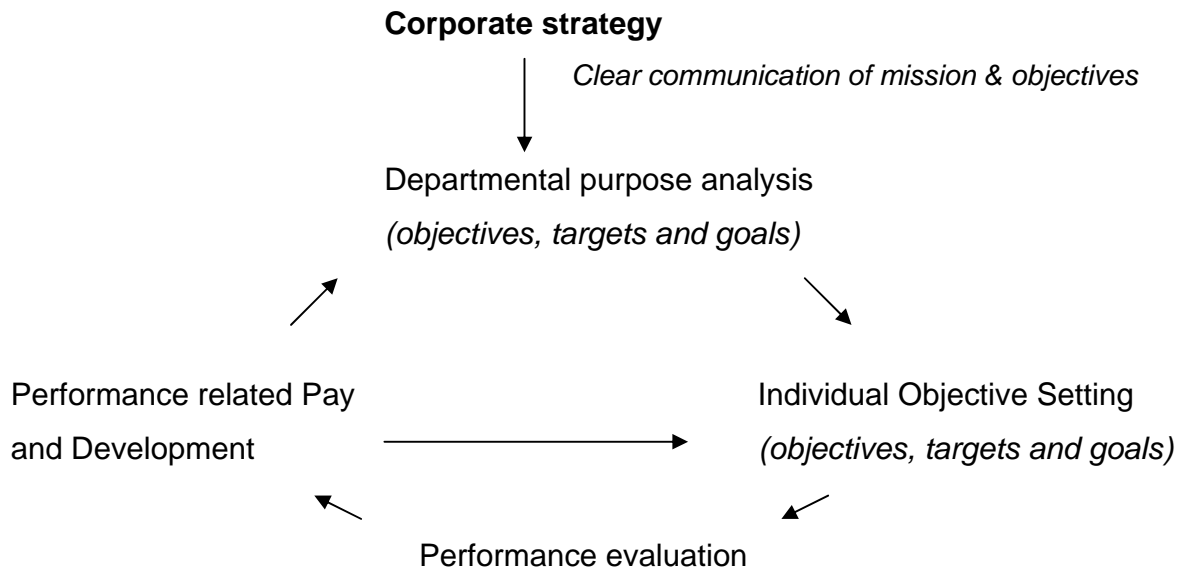


Figure 6. Elements of a performance management system (Storey & Sisson, 1993, p.133)

Spangenberg and Theron (2001) share a more operational perspective to performance management. Their approach involves the planning of performance, the setting of goals, coaching, development and the appraisal of performance. In terms of this approach, performance management is positioned as “a comprehensive, integrated business-driven system aiming at organizational and people development” (p.36). The approach introduces some practical performance management issues. Firstly, it details the broad phases of a performance management system namely planning, coaching, development and assessment. Secondly, it highlights the need for integration of the performance management system to business drivers. Lastly, it emphasises the development of resources.

The above aspects once again re-iterate the need for a link between performance management and other human resource components as introduced in Section 3.1 and presented in Figure 5.

3.1.3 Performance management considerations

Changing business strategies, goals, targets, objectives, contexts, skills and behavioural requirements mean that as a process and a system, performance management requires constant attention, revision and alignment. The alignment of performance management to business strategy is crucial and highlights the need for a strategic business focus to performance management in achieving overall organisation effectiveness. A continual process check is therefore essential to ensure that the performance management system is strategically aligned (Glendinning, 2002).

Organisations can alter their approach to performance management in order to bring about this strategic focus. Suggestions in ensuring strategic adherence are reflected in Table 1 and reflect a broader organisation-based approach to performance management (Spangenberg & Theron, 2001).

TABLE 1. STRATEGIC CHANGES TO PERFORMANCE MANAGEMENT
(Spangenberg & Theron, 2001)

Past approach	Suggested strategic approach
HR orientation	Organisation orientation (that is, driving the mission, vision and values)
Independence	Integration
Focus on the individual	Group and process focus
Mechanistic system	Value-driven system
Generic competencies	Organisation-driven competencies

Finally, performance management also relates to the development of resources and although not part of the focus of the research, still warrants mention. Torrington and Hall (1995, p.399) suggest that the “approaches to and methods of development chosen need to be the most effective in achieving the skills and competencies required by the

organisation". Alignment of individual development to organisation competencies as part of the performance management process therefore also requires organisational consideration.

3.2 JOB PERFORMANCE MEASUREMENT

Byars and Rue (2006) define performance as the extent to which an employee accomplishes the tasks that make up his or her job. In order to establish whether such tasks have or are being accomplished, indicators or measures are needed to assist in tracking, measuring and managing this performance. In an effort to track and measure performance, outputs and behaviour, organisations make use of key performance indicators (KPIs). KPIs are statistics and other measures that are considered to be critical indicators that reflect key job performance behaviours (Els & De Villiers, 2000).

Clear and specific performance standards or measures assist in ensuring that employees know not only what they are required to do, but to what standard this needs to be done. They further serve future purposes in aiding the ease of performance assessment, guiding counselling interviews and defining the parameters for performance discipline (Meyer & Donaho, 1979). Meyer and Donaho (1979) share an additional five benefits of establishing performance measures and these include that:

1. Both the employee and the employee's supervisor are aware of the required level of performance.
2. The employee is able to constantly evaluate their own performance.
3. Employees experience greater comfort in the job, knowing what is required of them.
4. Better relations between the employee, peers and supervisor are likely as each of the parties knows what is expected. Communication and the absence of anxiety about performance requirements are more likely.
5. Employees are more likely to discuss their performance and seek assistance and direction from their supervisors when performance standards are known.

The measurement of job performance therefore holds many advantages and assists in the overall management of performance.

3.2.1 Performance measurement in Call Centres

The need to measure, track and manage performance has been highlighted above. As the business area in which the research takes place, performance measurement specifically within a call centre environment will be discussed in order to detail the research context.

Since call centres are dynamic business entities performance measurements, in order to be effective and value-adding, need to reflect this dynamic nature (Els & De Villiers, 2000). Els and De Villiers (2000, p.65) highlight that the core purpose of measurements within a call centre environment is to accurately reflect and report on “key performance areas” of the centre and its personnel. The challenge is therefore to identify appropriate and critical aspects which will reflect both operator and call centre performance.

A number of call centre performance measures are typically used (Els & De Villiers, 2000). These include:

- Productivity measurements;
- Adherence measurements; and
- Qualitative measurements.

Productivity measurements can be considered as production statistics within a call centre environment. Within this environment such measures could include calls per hour or number of calls missed. A lack of control over the number and type of inbound calls has however reflected poor reliability of this measure over time (Els & De Villiers, 2000) and the influence of situational factors makes the avoidance of this phenomenon problematic.

A call centre is a highly structured environment and it is typically found that adherence measurements are in operation (Els & De Villiers, 2000). Adherence measurements relate largely to the time available to handle calls versus the time scheduled to handle calls. This measure is sometimes referred to as plugged-in time and provides an indication of job performance behaviour.

The third suggested measure is a qualitative one. Qualitative measurements relate to quality aspects and include issues such as product knowledge and customer service orientation (Els & De Villiers, 2000).

The issue of quantity versus quality in call centre performance measurement needs to be highlighted. From the presented measures it is evident that call centres present a challenge in finding a balance between quantity and quality measures (Els & De Villiers, 2000). Call centres demand high quantity and productivity yet still require excellent call quality. Focusing purely on hard data which involves the number of calls answered, time on line and similar aspects does not provide an indication of how the job was done. Quantitative measures could therefore indicate that an employee is outperforming his or her peers yet the quality of service may be sub-standard and damaging to the overall reputation and performance of the centre (Menday, 1996). A balance between quantitative and qualitative measures is needed.

In response to the above challenge it is evident that call centres are increasingly adopting a 'balanced scorecard' approach to the measurement of success (Clegg, 2000). This approach combines the use of traditional measures (for example, call waiting time) with qualitative measures such as customer satisfaction or efficiency of service delivery. The required balance is worked towards through the use of this method.

In practicality Menday (1996) highlights that productivity data are relatively measurable and are generally represented by numbers. Quality measures are, however, more subjective and require some form of judgement. Guidelines are critical for qualitative

measures in an attempt to maintain consistency between supervisor ratings. Supervisor ratings and potential errors that occur in this regard will be at the centre of the performance evaluation discussions that follow at a later stage.

Broad measures relevant to the call centre environment have been shared above. In delving further into specifics of these performance measures, it is possible to identify key performance indicators (KPIs) typical of this business environment. Key performance indicators of a call centre reflect and report on the core business of the centre (Els & De Villiers, 2000). Two broad categories of call centres are in operation, namely inbound and outbound centres. Inbound centres are those where customers typically call the centre with a query or request whilst an outbound centre is one in which the call centre operator calls the client normally to promote a product, service or sale (Zapf, Isic, Bechtoldt & Blau, 2003). It is important to note that the type of call centre will shape the type of performance measures or KPIs utilised (Read, 2000).

Given the differing nature and business focus of call centres it is a challenge to present common performance measures. Els and De Villiers (2000), however, suggest the following KPIs as typical of the call centre environment:

- Friendliness in customer relations
- Quantity of calls handled
- Quantity of customer complaints
- Average time on line, and
- Product knowledge.

Within the organisation for the research the following performance measures are utilised:

- Average active time
- Adherence to daily schedule
- Average call handling time

- Quality

Further detail on the organisation performance measures is presented in the criterion discussions in Chapter 4.

In summarising the discussions on call centre performance measurement it is important to highlight that constant updating, amending and fine-tuning of measures is needed in order to provide an accurate depiction of current and required performance (Els & De Villiers, 2000). Once accurate performance measures are in place, tracking, monitoring and the evaluation of performance against these measures can take place.

3.2.2 Types of performance measures

A number of types of performance measures are in operation. Examples of measures as presented in Figure 2 in Section 2.2 include performance appraisals, performance data and personnel data.

A performance appraisal is defined as “a process of determining and communicating to an employee how he or she is performing on the job, and ideally establishing a plan of improvement” (Byars & Rue, 1991, p.248). Its objective is “to evaluate an individual employee’s performance on a job” (p.91). Performance appraisals serve a number of functions including providing input into administrative decisions, individual and organisation development and encouraging performance improvement. Two further benefits of the output of performance appraisals, and those specific to the research, include input into selection validation processes and human resource planning (Byars & Rue, 1991).

Performance data relate to production statistics such as quantity and volume whilst personnel data relate to measures such as absenteeism, turnover and tardiness (Byars & Rue, 1991).

Grobler, Warnich, Carrell, Elbert and Hatfield (2006) suggest the following performance criteria to guide the setting of appropriate measures:

- Trait-based criteria. These criteria focus on the personal qualities and characteristics of the employee. Aspects such as dependability and creativity are included here.
- Behaviour-based criteria. These criteria deal specifically with behaviours associated with successful job performance.
- Results-based criteria. These criteria have as a focal point the completed output or product. Consideration is not given here to how the outcome was achieved or an aspect such as quality.

Performance criteria such as traits, behaviours, results or a combination thereof can therefore guide the choice of appropriate measures. Each of these measures differs in their level of objectivity and will be referred to again in discussions later.

For any of the aforementioned types of measures to add value they need to be job-related and as such the choice thereof needs to be guided by the outputs of the job analysis process (Byars & Rue, 1991). The many functions of job analysis were highlighted in Section 2.1.1.1. The concept of job analysis is introduced once again but at this point within the context of performance measurement. From a performance measurement point of view, job analysis assists in highlighting “how successful performance of the job is to be measured” (Byars & Rue, 2006, p.144). Job analysis therefore assists in guiding how performance measurement can or should take place.

3.2.3 Performance evaluation

Once performance measures are in place performance can be tracked, managed and evaluated. The discussions that specifically deal with qualitative call centre measures in

the preceding sections highlight one of the challenges of performance evaluation, namely consistency between supervisor ratings. This part of the literature review will touch on understanding performance evaluation as well as some of the potential rating errors that are experienced in this regard.

Performance evaluation is central to the management of performance and is key to a number of human resource functions including reviews and validations. Performance evaluation helps to provide data for reviewing the effectiveness of selection and development (Bowman, 1999).

Performance evaluation presents a number of challenges. The overarching challenge can, however, be summarised as “to decide what to appraise in a manner that meets the needs of the organization and the individual” (Bowman, 1999, p.559). A number of evaluation methods, in the absence of completely objective output measures, require some judgement. The degree of objectivity distinguishes among the trait-based, behaviour-based and results-based criteria shared in the aforementioned section.

Regarding evaluation, the trait-based approach is extremely subjective and poses challenges as far as validity and reliability are concerned. Traits are, however, important and the identification of characteristics through an accurate job description process and the training of raters can assist in increasing validity in this regard (Bowman, 1999). The behaviour-based approach tends to be more objective by nature. Behaviour-based rating scales and critical incident techniques are evaluation methods suggested in this regard. These methods are slightly more time consuming and the value they add is largely dependent on their job-relatedness (Bowman, 1999).

The results-based approach makes use of methods such as management-by-objectives which aids performance evaluation. Here value-add is found in the cascading of organisation goals and objectives, setting and agreeing upon individual goals, monitoring and reviewing performance and making comparisons against planned and actual performance in conducting the evaluation (Bowman, 1999).

3.2.3.1 Potential errors in performance rating

A number of errors are reported in the rating of performance. Byars and Rue (2006) detail some of the more common errors as leniency, central tendency, recency and the halo effect.

Leniency occurs when a supervisor awards employees higher ratings or evaluations than they deserve. Inexperience and/or the fear of negatively impacting supervisor-subordinate relationships are two of the drivers of this type of error (Grobler et al., 2006). Feelings can affect ratings and leniency is more likely to occur when the rater has positive feelings towards the ratee (Tsui & Barry, 1986).

Central tendency is evident when a supervisor awards predominantly average ratings to all their subordinates. A lack of objective performance measures or data as well as the difficulty experienced by some supervisors in evaluating some employees more negatively are some of the reasons cited for the occurrence of this error (Grobler et al., 2006).

Recency relates to the tendency of supervisors to base their ratings on more recent occurrences or behaviours. The absence of objective measures and complete performance record-keeping aggravate the occurrence of this error (Byars & Rue, 2006).

The tendency of a supervisor to allow one aspect of an employee's performance to dominate their ratings is known as halo effect. An example could include rating an average performer better as a result of their good attendance record. The opposite of this error is found when a negative aspect dominates. This is referred to as horn effect (Grobler et al., 2006). A strong positive or negative feeling towards the ratee results in a greater likelihood of the occurrence of halo or horn effect respectively (Tsui & Barry, 1986).

Pursell, Dossett and Latham (1980) highlight that rating errors affect performance assessment and by default affect the criterion measure in a validation study. The potential occurrence of these errors is therefore cause for concern and requires consideration in research design.

As highlighted in Section 2.2.1.1, the training of supervisors on potential rating errors is suggested as one method to curb the occurrence and impact of these errors (Cascio, 1982; Grobler et al., 2006; Pursell et al., 1980). Byars and Rue (1991) suggest that this training should include training on the evaluation method, the rater's role, an overview of evaluation information and skills in giving feedback. Fay and Latham (1982) in their study on the effects of rater training found that rater errors were significantly reduced as a result of rater training. This was shown with training on halo, contrast and first impression effects.

A further suggested method to avoid rater errors is to revisit evaluation methods. It is suggested that behaviour-anchored rating scales can be used as one method to reduce leniency, halo effect and central tendency rating errors. In this method specific examples of performance are used against which to evaluate the employee (Byars & Rue, 1991). The aforementioned study by Fay and Latham (1982) confirmed these findings and showed that behaviour-based criteria were more resistant to rater errors than trait-based criteria. The use of behaviour-based criteria therefore presents a further way to reduce rater errors.

3.3 JOB PERFORMANCE AND TEST VALIDATION

As highlighted in Section 2.2, the Employment Equity Act (No.55 of 1998) legislates that assessment devices may only be used that are, amongst others, valid and reliable. Reliability refers to consistency of measurement whilst validity refers to the fact that the instrument measures what it is intended to measure (Byars & Rue, 2006).

From a selection point of view, assessment instruments are utilised in the selection process to assist in the attempt to predict future job performance. Job performance is the key criterion measure in this validation study and therefore took centre stage as the focus of this chapter.

A validation process consists largely of two phases. The first phase deals with identifying and selecting the performance measure (that is, the criterion measure) against which test performance will be compared. The second phase deals with the statistical analyses that are conducted to determine the existence and extent of the relationship (Gekoski, 1964). This chapter (Chapter 3) deals with the criterion measure whilst Chapter 4 that follows deals with the empirical study and statistical analyses.

Meyer and Donaho (1979) re-iterate that the first step in any validation process is the selection of performance criteria. Without a clear understanding and depiction of what successful performance is, it is virtually impossible to assess whether a test battery is predicting successful performance on the job. In Section 2.1.1.1 and Section 2.2 the need for an accurate job analysis in understanding the job and its performance criteria and in guiding the validation process was discussed. Job analysis was defined as “any systematic procedure for obtaining detailed and objective information about a job, task or role that will be performed or is currently being performed” (Pearn & Kandola, 1993, p.1). The key end result of this definition and the aspect aimed to be measured is job performance. “A good, usable analysis of jobs and tasks breaks down the performance into its component parts to find the process used, then examines important relationships between the process and correct performance to assess effective results, and finally restructures the process so it can be learned and performed” (Carlisle, 1986, p.18). This learning process guides the detailed description of successful job performance and shapes the measures to be used.

Gekoski (1964) highlights that performance consists of more than just the tasks that are performed. Issues such as attendance, interest and work orientation provide valuable additional information about the employee and the way in which they will conduct their

work. This introduces the concept of components of successful performance. This is a global concept and represents all the aspects and behaviour that would constitute success in the job. These broad components need to be considered when doing a job analysis.

3.3.1 Performance measures in test validation

A performance measure in a validation study should not be confused with performance measurements discussed earlier. A performance measure in a validation study is a sample of behaviour that is extracted and utilised as a representative sample of successful job performance (Gekoski, 1964). As such an understanding of performance management and the need to focus not only on individual, but organisational goals and objectives is necessary. Knowledge of performance measurements is critical in that the criteria for job success need to be known in order to identify appropriate performance measures for the validation study (that is, a relevant and representative sample of work behaviour).

Two categories of performance measures are typically utilised in validation studies, namely objective performance measures and subjective performance measures (Cascio, 1982). As presented in Section 2.2.1.1, objective measures of performance are those measures where a measurement tool is already in existence (Gekoski, 1964) and can be likened to hard performance data. Examples include:

- Quantity
- Quality
- Absenteeism and turnover statistics
- Maintenance costs
- Health and safety measures, and
- Waste records.

Although these measures are relatively quantifiable, potential problems may be encountered in their use. Poor, incomplete or absent record-keeping, a lack of performance information specific to the individual and the comparability of records between sections may all be challenges experienced when working with these measures in the validation process (Gekoski, 1964). The effect of situational factors can also negatively influence these measures (Cascio, 1982). These potential problems as well as the possibility that the above measures may not fully represent all relevant components of job success lead to the utilisation of subjective performance measures in the validation process.

Subjective measures of performance, as highlighted in Section 2.2.1.1, are often used in validation and involve an element of judgement in evaluating an employee's behaviour (Cascio, 1982; Gekoski, 1964; PAI, 2005). Subjective measures include peer, supervisor or subordinate evaluations and can be obtained via ratings, checklists, paired comparisons or forced-choice methods (Gekoski, 1964). To add value, subjective measures need to be related directly to the job and those behaviours associated with successful job performance (Cascio, 1982). Potential rating errors as highlighted in Section 3.2.3.1 of this chapter also need to be considered and the training of raters is suggested to aid the quality of data obtained.

Gekoski (1964) shares the following characteristics of good performance (criterion) measures and those which would be effective in test validation:

- *Reliability*. Reliability here relates specifically to the consistency in measurement results obtained. Increasing the number of observations; making use of multi-raters and utilising rating instruments with more items are ways suggested to increase reliability.
- *Validity*. This characteristic relates to the measure's representativeness and that it measures what it is intended to measure. Comparing of the same measure from different sources is one potential way of attempting to increase validity. It

should be remembered that this method is by no means foolproof. If both measures are invalid then no value-add will be experienced.

- *Appropriate weighting.* Weightings should reflect the levels of significance of each of the measures' subcriteria.
- *The absence of contamination of the criterion data.* Good performance measures imply that no spoiling of data or measure has occurred. As discussed in Section 2.2.1.1, criterion contamination can occur when the rater becomes aware of the criterion data.
- *The absence of rater error effects.* The absence of potential rater errors such as central tendency, leniency, halo effect and bias as presented earlier in Section 3.2.3.1 implies a better measure of performance.

For the purpose of the present research a combination of objective and subjective measures will be utilised in an effort to obtain the potential benefits of both measures. Full explanations of the criterion measure is provided in Chapter 4. Suffice to indicate at this point that both performance statistics (that is, hard performance data) and supervisor ratings (that is, soft performance data) have been incorporated.

Considerations to Gekoski's (1964) guidelines shared above were included in the performance measure design and this included specific consideration to the validity and reliability of measures, weightings, the avoidance of criterion contamination and the potentiality and avoidance of rater errors. These aspects will be at the centre of some of the empirical discussions in the chapter that follows.

REMARK

In concluding this chapter the following theoretical aim as captured in Section 1.3.2 has been fulfilled:

- To conceptualise performance management, measurement and evaluation and its role in test validation (See Section 3.1.1; 3.2; 3.2.3 and 3.3).

INTEGRATION

“Without a high-quality labour force, an organisation is destined to have mediocre performance” (Grobler et al., 2006, p.9). Organisations need to accurately identify and fully utilise the resources at hand (Amos et al., 2004). An emphasis on effective selection and the management of performance is suggested and the discussions of the literature review in Chapters 2 and 3 centred on these issues.

The business need for the identification and selection of the right staff was discussed in Chapter 2. With an increased focus on customer service, call centres are continuing to emerge in an attempt to consolidate customer service business operations. Call centre operators are placed in direct telephonic contact with the customer and therefore have a key role to play in customer service delivery. With greater competition and a need for efficient customer service, organisations can no longer afford to incorrectly select and place employees.

Selection tools and more specifically, psychometric tests such as personality and ability tests were suggested as one method to aid the selection decision-making process. The central role of job analysis in accurately describing and defining the job was highlighted. The benefits of guiding not only selection, assessment choice and decision-making but the validation of these tools and processes were also discussed. A clear understanding of the job and what effective performance is was highlighted as prerequisite of an effective selection process and the identification of appropriate predictors. As the critical criterion measure in a validation study, performance formed the theme for the discussions of Chapter 3.

Increased competition has placed growing pressure on organisations to optimise organisational and employee performance. Job performance and the management

thereof is a key business focus. A sound strategy, clear and aligned business goals and the cascading of business goals and objectives to individual performance are some of the pillars for the management of performance. Performance management as a system was discussed in Chapter 3 and the alignment of business goals and objectives to individual performance measures was stressed.

The central role of job analysis was once again echoed and it was highlighted that job analysis assists in identifying performance measures. Performance measures aid the tracking, measurement and management of performance and can serve as the criteria of job success. Both objective and subjective measures of performance are typically in use. The starting point in the construction of appropriate performance measures is the identification of company goals and objectives with consideration of divisional purpose and objectives (Gekoski, 1964). The role of business strategy in performance measurement construction should therefore not be underestimated.

In validating a test battery for selection purposes objective performance measures are typically considered first followed by subjective measure formulation. Measures need to be checked for validity, reliability and the avoidance of rater errors and undergo statistical analyses. Sub-criteria need to be weighted and the criterion validated (Gekoski, 1964). Common errors in rating were highlighted as a concern for subjective measures of performance and the training of raters was suggested as a method to assist in this regard.

The role of performance in validation exercises in identifying criteria for success is critical and methods for establishing performance measures in this regard were suggested. Selection and performance, brought together through an accurate job analysis, form an integrated network in guiding a valid, fair and reliable selection process. Ongoing validation is necessary to ensure that a relationship between the selection process and performance exists, that is, that the selection process is measuring what it intends to, namely future job performance.

REMARK

In concluding the literature review the theoretical aim as captured in Section 1.3.2 has been met:

- To integrate the aspects of selection, performance and validation.

3.4 CHAPTER SUMMARY

In this chapter, the business imperative to focus on performance was discussed. Performance management and performance measurement as means to manage, measure and meet key business goals and objectives were presented. The critical role of job analysis and performance measures in this process and the relationship between selection, performance and test validation were discussed. The chapter concluded with an integration of the literature review for the research. The empirical study is introduced and discussed in Chapter 4 that follows.

CHAPTER 4

EMPIRICAL STUDY

In this chapter, the empirical study is discussed. The research procedure, population and sample are detailed. Measures of the independent and dependent variables are discussed and steps in gathering data and the processing thereof are highlighted.

4.1 AIM OF THE EMPIRICAL STUDY

As reported in Section 1.3.2 the aims of the empirical study are:

1. To determine the correlation between the Customer Contact Styles Questionnaire raw scores and operator job performance.
2. To determine the correlation between the Basic Checking ability test raw scores and operator job performance.
3. To determine the correlation between the Audio Checking ability test raw scores and operator job performance.
4. To evaluate whether a test battery for the selection of call centre operators can be utilised as a predictor of job performance.
5. To determine the moderating effects of the extraneous variables of race, gender, age, education level, length of service and time in current position.

4.2 POPULATION AND SAMPLE

The research was conducted within the operator services division of a national communications company. The company provides a fixed-line service offering and a communications network infrastructure. The operator services division consists of three inbound call centres based in Port Elizabeth, Cape Town and Gauteng. The call centres attend to customer enquiries whereby customers telephonically call the centre and speak directly to a call centre operator to obtain individual or business telephone

numbers. These operator services call centres form the population for the research. The total population size at the time of the research consisted of 246 call centre operators spread across the three call centres. A total of 14 supervisors are responsible for these operators representing an average ratio of 17.6 operators per supervisor.

A purposeful non-random sampling technique was used in selecting the sample. A purposeful non-random sampling technique is one in which the researcher uses his or her judgement and selects those respondents which will best meet the purpose of the research (Bailey, 1987). This type of sampling technique was chosen instead of a completely random or convenience sampling technique in order to get a spread of both top and bottom end performers so that a differentiation of performance for correlation purposes would be evident.

In using this sampling technique, the researcher requested supervisors to rank their operators from top to bottom performer. This ranking was done on a subjective basis by each supervisor and no reference was made to specific performance data. The researcher then identified the top six performers and the bottom six performers per supervisor to be included in the sample. In instances where supervisors did not have 12 operators reporting to them the maximum number of operators for the supervisor was selected.

The sample for the research consisted of 150 operators. One supervisor, who had 10 performers in the sample, refused to complete the criterion measure. This affected the response rate and represented a final research sample of 140 operators (N=140) and a response rate of 94 percent. In terms of survey research, a response rate above 70 percent is considered to be acceptable for analysis and reporting (Babbie, 1990).

4.3 MEASUREMENT OF BIOGRAPHICAL INFORMATION

The following biographical information for the sample was sourced from the organisation's human resources department:

- Age
- Gender
- Race
- Education level
- Length of service
- Time in current position

The biographical data enabled the sample to be profiled and was deemed necessary to consider in observing potential moderating effect. A summary of the biographic data of the sample is reported on in Chapter 5.

4.4 INDEPENDENT VARIABLE MEASURE

The independent variable measure was confirmed as a result of a thorough job analysis. The Work Profiling System (WPS) as discussed in Section 2.1.1.1 was utilised to profile the operator job. The job analysis was facilitated by the HR consultant for the Port Elizabeth operator services call centre who is trained on the system and was conducted in consultation with three current job holders (operators) and two supervisors from the operator services call centre. An extract of the job profile is captured in Appendix 1 and details specific information about the job and its requirements. From the job analysis exercise the competencies for the operator position were ranked according to extreme, high, moderate and baseline importance and are presented in Table 2.

TABLE 2. OPERATOR JOB COMPETENCY RANKING (IN ORDER OF IMPORTANCE)

Extreme	High	Moderate	Baseline
Relating to Customers	Team Work	Business Awareness	Reliability
Customer Focus	Results Driven	Using Initiative	Problem-solving
Quality Orientation	Fact Finding	Resilient	Communicating in Writing
Communicating Orally		Specialist Knowledge	
Convincing			

Based on the outputs of the job analysis exercise and the above competency rankings, the electronic WPS report recommended the following assessments, as presented in Table 3, as measures of the critical competencies for incumbents in the position of operator.

TABLE 3. SUGGESTED ASSESSMENT METHODS

Domain	Test
Verbal test	VCC1, VP5.1, VP1.1
Numerical test	NCC2, NP6,1, NP2.1
Checking test	CP3.1, CP8.1
Personality questionnaire	CCSQ7.2 or OPQ32i

The organisation utilised the research data as part of a national competency audit and opted to focus on checking ability and personality. With regard to checking ability, the checking test CP3.1 was suggested through the WPS process. CP3.1 is a checking test which appears to focus on jobs such as hotel booking clerks (SHL, 2000a). The face validity of this test with job incumbents was a concern and it was therefore decided, in consultation with assessment specialists, to make use of the CP7.1 instead. CP7.1 is an alternative basic checking test which, at face value, was more closely associated with the work of an operator. The CCSQ7.2 was selected as the personality

questionnaire as opposed to the OPQ32i as it is more specific to the sales and service job roles (SHL, 2000b).

Based on the above analysis process, the independent variables for the research are therefore:

- Customer Contact Styles Questionnaire Version 7.2 (CCSQ7.2)
- Personnel Test Battery's Basic Checking test (CP7.1)
- Personnel Test Battery's Audio Checking test (CP 8.1)

The CCSQ7.2 is a structured personality questionnaire whilst CP7.1 and CP8.1 are ability tests from the Personnel Test Battery. The description and aim of the measures are presented below. Details of administration and reliability and validity are discussed.

4.4.1 Customer Contact Styles Questionnaire

4.4.1.1 Description and aim of the instrument

The Customer Contact Styles Questionnaire Version 7.2 (CCSQ7.2) is a self-report personality questionnaire developed by SHL. The questionnaire is utilised in the selection and development of people at work in non-supervisory sales or customer service roles. It details information relating to the personality of the individual along 16 dimensions that are deemed important for functioning within the aforementioned work roles (SHL, 2000b). The 16 dimensions are presented in Table 4 that follows and full descriptions of the scales are presented in Appendix 2.

The questionnaire consists of 128 statements and respondents are required to rate each statement on a five-point likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Statements are further grouped in sets of four and respondents are required to indicate the statement of the four that is most typical of them and that which is least true or typical of them. The test takes approximately 30 minutes to complete

although no set time limit for the test exists. Respondents are encouraged to work quickly and decisively (SHL, 2000b).

The questionnaire is available in both a normative and ipsative version. For the purpose of the research, the ipsative version whereby respondents are forced to choose between options was utilised.

TABLE 4. DIMENSIONS OF THE CCSQ (SHL, 2000b)

Category	Dimension	Label
Relationships with people	Persuasive	CR1
	Self-Control	CR2
	Empathic	CR3
	Modest	CR4
	Participative	CR5
	Sociable	CR6
Thinking style	Analytical	CT1
	Innovative	CT2
	Flexible	CT3
	Structured	CT4
	Detail Conscious	CT5
	Conscientious	CT6
Emotions	Resilience	CE1
	Competitive	CE2
	Results Oriented	CE3
	Energetic	CE4

4.4.1.2 Administration of the instrument

A paper and pencil mode of administration was utilised in the completion of the CCSQ7.2. Candidates were requested to complete their name and biographical details on the answer sheet in the space provided. Candidates were provided with a brief explanation on the questionnaire and what it aims to measure (SHL, 2005).

The test administrator presented the candidates with a set of standardised instructions. Candidates were advised that the assessment was a questionnaire and not a test and were encouraged to respond honestly and accurately. Two example questions were presented and discussed to ensure that all candidates understood the test and completion thereof. Candidates were presented with a final set of instructions. Candidates were reminded that the test did not have a set time limit but were advised to work quickly and decisively (SHL, 2005). The questionnaire and instructions were completed in English under standardised testing conditions.

4.4.1.3 Reliability and validity of the instrument

The Customer Contact Styles Questionnaire (CCSQ) has been tested extensively internationally and reports mean alpha reliabilities of approximately 0.82 (Baron, Hill, Janman & Schmidt, 1997). Specific studies conducted locally with relatively large samples (N=2405; 2397 and 737 respectively) have shown results of alpha coefficients ranging between 0.76 and 0.90 (SHL, 2001); 0.74 and 0.90 (SHL, 2000c) and 0.75 and 0.90 (SHL, 2000d).

A number of international studies have been conducted in terms of validity and specifically relating to criterion-related validity and have shown the predictive relationship of this instrument to performance (Baron et al., 1997). The normative version of CCSQ (CCSQ5.2) was utilised in a local study by La Grange and Roodt (2001). This study showed that a number of personality dimensions, as measured by the CCSQ5.2, predicted job performance. The present research will assist in adding to

the body of local knowledge on the predictive ability of the ipsative version of the Customer Contact Styles Questionnaire, Version 7.2 (CCSQ7.2).

4.4.1.4 Justification for selection of the instrument

The instrument was selected in line with the outputs of the job analysis exercise. As reported in the introduction to this section (Section 4.4) the Customer Contact Styles Questionnaire (CCSQ7.2) was selected over the Occupational Personality Questionnaire (OPQ32i) as it was developed specifically for customer service roles (SHL, 2000b).

4.4.2 Basic Checking

4.4.2.1 Description and aim of the instrument

The Basic Checking Test (CP7.1) is part of the Personnel Test Battery and is aimed at a basic level. It is predominantly for positions which require routine checking such as order clerks and copy typists. The test measures a candidate's speed and accuracy in checking non-contextual information such as sequences of letters and/or numbers (SHL, 2000a).

The test is made up of two separately timed subtests. The first subtest consists of number sequences. The second subtest is concerned with combinations of letters. Candidates are presented with a sequence of numbers (or letters) on the left hand page and are required to select the exact match from five sequences on the right hand page. Strings of sequences increase in length through the test to increase the level of difficulty. The test consists of 80 items in total and candidates have 10 minutes to complete the test (SHL, 2000a).

4.4.2.2 Administration of the instrument

Candidates were requested to complete their name and biographical information on the answer sheet in the space provided. Candidates were introduced to the test by way of a brief explanation on the test and what it aims to measure. Candidates were led through a standardised set of instructions on how to complete the test and were presented with five example questions on which to practice. The administrator reviewed the correct answers to the practice questions and attended to questions which arose. Candidates received a final set of instructions and final questions were answered. Candidates began and completed the test as per the set test timelines (SHL, 2000a). The test and instructions were completed in English under standardised testing conditions.

4.4.2.3 Reliability and validity of the instrument

A number of reliability and validity studies have been conducted within South Africa with the inclusion of this instrument. A study involving a sample of 9665 employees reported an alpha coefficient of 0.93 for the Basic Checking test (SHL, 2003a). A further reliability study involving a sample of 1379 reported similar findings with a reliability score of 0.94 reported (SHL, 2003b). In a study on the selection of air traffic controllers validity correlations of 0.14 were shown between test performance and college performance (SHL, 2004). Small sample size is reported however (N=51) and further studies are therefore needed to substantiate these findings.

4.4.2.4 Justification for selection of the instrument

The instrument was selected as a measure of checking ability in line with the domain suggested in the outputs of the job analysis exercise. The test was selected as opposed to an alternative checking test CP3.1 due to its face validity. CP3.1 is a clerical checking test and the content thereof is based on information concerning hotels (SHL, 2000a). The CP7.1 is also a measure of the speed and accuracy of clerical

checking but appears more generic in terms of content and was therefore selected, in consultation with assessment specialists, for face validity purposes.

4.4.3 Audio Checking

4.4.3.1 Description and aim of the instrument

Audio Checking (CP8.1) is one of the tests in the Personnel Test Battery. It is a test of speed and accuracy in checking information. The test is designed largely for jobs that require processing of oral information, either telephonically or face to face. Positions include telesales, audio-typists and telephonists. The test measures speed and accuracy of a candidate in comparing spoken and written information. Information is presented on an audio cassette. Material in the test is non-contextual so as not to be influenced by verbal or other skills (SHL, 2000a).

The test consists of three subtests. This includes numbers, letters and numbers plus letters. In the subtests sequences of numbers, letters and numbers plus letters are provided and need to be selected from one of five options provided in the booklet. The length of sequences increases as candidates progress through the test. The test consists of 60 items and has a 10 minute time limit (SHL, 2000a).

4.4.3.2 Administration of the instrument

An audio cassette player was utilised in the administration of this test. Candidates were requested to complete their name and biographical information on the answer sheet in the space provided. Candidates were introduced to the test by way of a brief explanation on the test and what it aimed to measure (SHL, 2000a).

Candidates were led through a standardised set of instructions on how to complete the test and were presented with five example questions on which to practice. The administrator reviewed the correct answers to the practice questions when all

candidates had completed the example questions and attended to any questions which were raised. Candidates received a final set of instructions. Candidates began and completed the test under standardised test conditions (SHL, 2000a). The test and instructions were completed in English.

4.4.3.3 Reliability and validity of the instrument

Past local validation studies of the Personnel Test Battery tests indicate that these ability tests correlate positively with job performance. The alpha coefficient for the Audio Checking test is reported as 0.85 (SHL, 2003a). In a study on the selection of air traffic controllers correlation scores of 0.26 of test performance to college performance were reported (SHL, 2004). However, in this study a small sample size (N=51) is reported and further validation studies are therefore needed to support the findings. The present research will assist in adding to this body of knowledge.

4.4.3.4 Justification for selection of the instrument

The instrument was selected in line with the outputs of the job analysis exercise. It is a measure of audio checking and therefore holds strong face validity for job incumbents. The instrument was utilised in a validation exercise in a call centre environment in a study by Nortje (2003) but did not show strong correlations to job performance. In this study, the instrument was included for face validity purposes and it is therefore of interest to see the results from this instrument in the present research.

4.5 DEPENDENT VARIABLE MEASURE

The measuring instrument for the dependent variable is the Customer Contact Competency Inventory (CCCI) as developed by SHL (Baron et al., 1997).

4.5.1 Description and aim of the instrument

The CCCI is a questionnaire designed for measuring performance of non-managerial sales and customer service staff against 16 competencies. The 16 competencies are listed in Table 5 and definitions of the competencies are provided in Appendix 3. The CCCI can be used on a self or 360 degree assessment basis to provide objective feedback on performance (Baron et al., 1997).

TABLE 5. COMPETENCIES MEASURED BY THE CCCI (Baron et al., 1997)

Category	Competency	Label
People focus	Relating to Customers	P1
	Convincing	P2
	Communicating Orally	P3
	Communicating in Writing	P4
	Team Working	P5
Information handling	Fact Finding	I1
	Problem Solving	I2
	Business Awareness	I3
	Specialist Knowledge	I4
Dependability	Quality Orientation	D1
	Organisation	D2
	Reliability	D3
Energy	Customer Focus	E1
	Resilient	E2
	Results Driven	E3
	Using Initiative	E4

The questionnaire consists of 128 statements presented in groups of four statements which respondents have to rate on a five-point likert scale ranging from Hardly Ever (1)

to Almost Always (5). Respondents are further required to indicate which of the four statements is most true or typical and which is least true or typical of the individual being rated (Baron et al., 1997). The questionnaire takes approximately 35 minutes to complete including instruction time.

4.5.2 Administration of the instrument

For the purpose of this research, supervisors completed an online version of the questionnaire as a measure of the operator's performance. Supervisors attended a briefing session which included instructions on how to complete the questionnaire (copy attached in Appendix 4). Supervisors were further provided with the set of online instructions when accessing the questionnaire.

Supervisors were required to capture their names and biographical details in the first section of the questionnaire and were then presented with two example questions to provide them with a visual depiction of a correctly completed question. Supervisors completed a practice question to ensure understanding. Supervisors were reminded that no time limit was set for the questionnaire but were encouraged to work quickly and decisively and were further reminded of potential errors which could occur when rating candidates.

4.5.3 Reliability and validity of the instrument

The Customer Contact Competency Inventory (CCCI) has been tested across a range of organisations with samples from the customer service and sales environment. Reliability has been tested from two perspectives, namely manager assessments of their direct reports and a self assessment point of view. Reliabilities of 0.76 to 0.92 were reported for manager assessments whilst self assessments showed slightly lower reliabilities of 0.67 to 0.85. This shows reliability coefficients of 0.67 to 0.92 for the instrument (Baron et al., 1997).

A number of concurrent validation studies are reported by Baron et al. (1997, p.17-35). These studies predominantly show correlations between the instrument and most of the core competencies identified for the position. Both the reliability and validity studies reported are based on international studies. The CCCI was used as the criterion measure in a local validation study by La Grange and Roodt (2001) and reported acceptable reliabilities for three criterion measures ($r=0.977$, $r=0.946$, $r=0.950$). No further dedicated local validity or reliability studies on the instrument could be sourced.

4.5.4 Justification for selection of the instrument

The CCCI provides a measure of the competencies associated with the operator position and was selected as the means for gathering data on the dependent variable as opposed to developing a criterion-based questionnaire specifically for the research. This alternative was chosen due to the documented psychometric properties of the instrument.

4.6 ADDITIONAL CRITERION MEASURES

As suggested by Bryman (1995) additional criterion data were used in the research to reduce the dependence on responses using one instrument. Performance data specific to the Operator Services division were utilised in this regard. The inclusion of additional criterion data further ensured the incorporation of both subjective and objective performance measures as suggested by Cascio (1982).

As introduced in Section 3.2.1, performance of operators in the organisation in which the research takes place is tracked and measured according to four measures, namely:

- Average active time,
- Adherence to daily schedule,
- Average Call Handling Time, and
- Quality.

The performance measures include three quantitative measures (average active time, adherence to daily schedule and average call handling time) and one qualitative measure (quality) as part of the division's performance management system. The measures are contracted with call centre operators through the organisation's performance management system and are closely tracked and monitored by supervisors in terms of measuring and managing their subordinate performance. The measures are described in Table 6.

TABLE 6. DESCRIPTION OF OPERATOR PERFORMANCE MEASURES

(R. Boshoff, Supervisor: Operator Services, personal communication, March 9, 2006)

Measure	Description	Nature	Tracking
Average active time	Relates to operator logged on time minus time for tea, lunch and body breaks. A shift is typically 9 hours and 105 minutes is allocated for the aforementioned time breaks.	Quantitative	Automated – tracked by internal computerised system.
Adherence to daily schedule	Relates specifically to the extent to which the operator adheres to the prescribed schedule in terms of time onboard.	Quantitative	Automated – tracked by internal computerised system.
Average call handling time	Reflects the average time an operator spends on the telephone with a customer. The shorter the call time, the better the performance.	Quantitative	Automated – tracked by internal computerised system.
Quality	A measure of operator accuracy, professionalism and courtesy when attending to customer queries and answering the telephone.	Qualitative	Manually – supervisor completes standard evaluation template.

Operator performance is closely tracked, measured and monitored. Targets are in place for each of the performance measures and aid performance evaluation. The targets further ensure that both supervisor and employee are aware of the required level of performance. Performance targets for the operator performance measures are reflected in Table 7.

TABLE 7. OPERATOR PERFORMANCE TARGETS

(R. Boshoff, Supervisor: Operator Services, personal communication, March 9, 2006)

Performance measure	Target
Average active time	06:15 to 06:30
Adherence to daily schedule	93% to 97%
Average call handling time	24 to 30 seconds
Call quality:	
Accuracy	90%-97%
Professionalism	90%-97%
Courtesy	90%-97%

Performance data for the sample was requested from the organisation. In processing this data it was however evident that not all data were available for all the operators in the sample. It was also found that average active time and adherence to daily schedule could potentially be influenced by other variables which were not recorded, for example, absence due to illness. Discussions were held with the research statistician and two Industrial Psychologists and it was decided that the questionable data should rather be omitted. Regarding the data utilised as additional criterion data, only average call handling time and the quality measure were eventually selected.

4.6.1 Average Call Handling Time

Average Call Handling Time is a quantitative, objective measure of performance and reflects the average time an operator spends on the telephone with a customer. All

calls are recorded and an Average Call Handling Time per month per operator is forwarded to the supervisor. As reflected in Table 7 the target for Average Call Handling Time is 24 to 30 seconds. Operators are encouraged to keep calls as short as possible so that further incoming callers are not required to wait on line for extended periods of time. Thus in terms of Average Call Handling Time, the shorter this is, the better the operator is performing. All calls are tracked, measured and recorded electronically via an in-house, computerised system which is connected to each operator's computer and telephone. The system tracks, records and stores all operator calls and activities, for example the time logged on, the time logged off and the amount of time spent on each call. All performance data are stored and utilised for performance evaluation and assessment purposes (D. Mazantsi, Manager: Operator Services, personal communication, March 9, 2006).

4.6.2 Quality

'Quality' represents a qualitative performance measure and is defined by the organisation as a measure of operator accuracy, professionalism and courtesy when dealing telephonically with customers. All operator calls are recorded and supervisors conduct five random quality checks on each operator's performance a month. An in-house, standardised online evaluation sheet consisting of 30 questions is utilised for this purpose (copy included in Appendix 5). Performance is evaluated on a scale of 'met', 'did not meet' or 'not applicable' and operators are assigned a quality score. Quality scores are stored online and utilised for performance evaluation and assessment purposes. The call centre strives to provide a quality service and the higher the quality score, the better the operator is seen to be performing (D. Mazantsi, Manager: Operator Services, personal communication, March 9, 2006).

4.7 DATA GATHERING PROCEDURE

Permission was obtained from the organisation to conduct the research and a data gathering plan was negotiated with the Human Resource Manager.

4.7.1 Main criterion data

Internal Human Resource (HR) consultants were utilised in each of the geographic locations to assist with data gathering. HR consultants were fully briefed by the researcher on the research, process and timelines. HR consultants were provided with a briefing document (see Appendix 4) and presentation and were requested to brief the selected supervisors in their respective regions. HR consultants briefed supervisors on a group basis on the research, data collection timelines and completion of the questionnaire. In line with the input on the training of raters to curb potential rating errors as reported in Section 2.2.1.1 and Section 3.2.3.1, the briefing doubled up as a training session and great emphasis was placed on ensuring that supervisors were fully informed on the correct completion of the questionnaire as well as the potentiality of rater errors. Supervisors were given a copy of the briefing document and presentation.

An email was sent to supervisors at the start of the data gathering process. The email contained a web link, unique username and password to access the online criterion questionnaires. Supervisors completed up to three questionnaires a week over a four-week period. Weekly reminders were emailed to supervisors to aid the response rate and completion of questionnaires. The four-week timeframe was lengthy and not ideal, but had to be negotiated with the line division in order to curb the impact on normal business operations. An additional two week extension was arranged for supervisors that were out of the office over the data collection period. Completed questionnaires were downloaded electronically and forwarded to the statistician.

4.7.2 Additional criterion data

Additional criterion data in the form of the aforementioned performance statistics (as discussed in Section 4.6) were requested from the organisation. Performance statistics for the sample for the 12-month performance cycle period was obtained. The different months for each of the criterion were intercorrelated and, as expected, high correlations were found. For this reason and to aid data processing, an average score for Average

Call Handling Time and Quality was calculated respectively and these were utilised as the additional criterion scores going forward.

4.7.3 Predictor data

Predictor data in the form of the Customer Contact Styles Questionnaire Version 7.2 (CCSQ7.2), Basic Checking (CP7.1) and Audio Checking (CP8.1) test raw scores for the sample were requested from the organisation and forwarded electronically to the statistician.

4.8 DATA PROCESSING

Data for the research were processed. Descriptive statistics were firstly done with the aim to describe the data (Durrheim, 2002b). Further statistical analyses were then utilised to test the research hypotheses to determine if a statistical relationship existed between the research variables (Bailey, 1987). The computerised statistical package, Statistica Version 6, was utilised for this purpose. Details of the specific statistical analyses are discussed below.

4.8.1 Descriptive statistics

Descriptive statistics enable a researcher to obtain an overall picture of the research data and assist by presenting the data in a user-friendly and orderly way (Durrheim, 2002b). Descriptive statistics assist in providing a concise description of the quantitative data (Kaplan & Saccuzzo, 2001).

For the purpose of this research, descriptive statistics were calculated for reporting on the profile of the sample. Descriptive statistics by way of means, standard deviations and reliabilities were calculated for the sample, predictors and criteria. Means represent the average response values whilst standard deviations highlight the degree of variance or distance away from the mean (Durrheim, 2002b).

Coefficient alpha was utilised to calculate the reliabilities. In psychological instruments where no right or wrong answers exist (as typically occurs in personality tests), the coefficient alpha is generally adopted as the reliability calculation method (Wolfaardt, 2001).

4.8.2 Correlations

Correlation coefficients are typically utilised in concurrent validation studies (Cronbach, 1960). The Pearson-product moment correlation coefficient is one of the most common ways of computing correlation coefficients (Anastasi, 1988) and was utilised for the research. This correlation considers not only an individual's position within a group but also their standard deviation from the mean. A number of correlations were calculated for the purpose of testing the hypotheses and to determine the relationship between the variables.

Correlation coefficients (r) are calculated to measure the existence and strength of the statistical relationship between the research variables (Bailey, 1987; Cronbach, 1970; Gekoski, 1964; Kaplan & Saccuzzo, 2001). $r=1$ indicates a perfect positive relationship whilst $r=-1$ indicates a perfect negative relationship (Cascio, 1982; Durrheim, 2002b). The sign of the correlation coefficient serves to indicate the direction of the relationship (Howell, 1997) and usually correlations higher than zero but less than 1.00 are found (Anastasi, 1988).

Ability correlations are typically positive although often low. A negative score would normally be as a result of the type of expression of the scores (Anastasi, 1988). Coefficients as low as 0.30 are of practical value. Although far from a perfect prediction, it is not typical to find validity coefficients of 0.60. Far smaller validity coefficients are normally reported, yet the reporting of a positive validity coefficient still provides a measure of predictive power that would be absent without the use thereof (Cronbach, 1970) and therefore requires consideration.

Inter-correlations were conducted on the raw test scores to determine the magnitude and significance of their relationship to assist in determining construct validity. Correlations were further calculated between the independent and dependent variable data. Correlations were also calculated between the biographical data (race, gender, age, education level, length of service and time in current position) and the criterion data to determine the effect of these moderator variables.

Correlation assists in determining the degree of relationship between the dependent and independent variables but does not enable the prediction of one set of scores from another set of scores. For this purpose, regression analysis was utilised (Cascio, 1982). Regression analysis is discussed below.

4.8.3 Multiple regression

Multiple regression is useful in a study where there are several possible predictors and assists in determining the relative contribution of each of the independent variables on the dependent variable (Bryman, 1995; McIntire & Miller, 2000). This statistical technique was utilised in the research as it assisted in determining the significance of the contribution of the various tests to job performance.

Multiple regression is calculated using a multiple regression equation. The equation is formulated based on the extent of correlation of each of the independent variables (the tests) on the dependent variable (performance) as well as the intercorrelation between the independent variables. Tests with high correlation to the criterion receive more weight (Anastasi, 1988).

The correlation between tests is also considered. High correlations introduce unnecessary duplication which will not add proportionately to the validity of the overall battery. In such instances, only one of the tests is retained in the battery. Correlations between the remaining tests will vary. Tests with the most unique contribution to the

overall battery should ideally receive more weight than those where duplication (albeit small) is evident (Anastasi, 1988).

In the multiple regression equation the weighting of the test is in direct proportion to its correlation with the criterion (that is, performance). Greater weight will therefore be awarded to the test with the greatest validity and least overlap with other tests in the battery (Anastasi, 1988). The starting point of a multiple correlation is therefore with the calculation of validities and intercorrelations (Cronbach, 1970).

The validity of the entire test battery is calculated by determining the multiple correlation (R) between the criterion (job performance) and the test battery. R shows the “correlation among more than two variables” (Bailey, 1987, p.399). R indicates the highest predictive value of the battery when the individual tests are weighted optimally in terms of their predictive value. Optimal weightings are determined via the regression equation (Anastasi, 1988).

It is important to note that the weightings assigned will only be applicable to the current sample. This is typical due to the possibility of errors in the correlation coefficients that are used in determining the weightings. The test battery should therefore be cross-validated by correlating the predicted criterion scores with the actual criterion scores in a new sample (Anastasi, 1988).

4.8.4 Statistical significance

Significance levels refer to the risk of error that researchers are willing to take in drawing conclusions from research data. If a correlation is said to be significant at $p \leq 0.05$, the researcher is indicating that the probability of error is 5 out of 100 or 5 percent (Hinton, 2004). In considering significance levels, probabilities are therefore considered. Probability is an expression of the likelihood that the observed difference could occur by chance. If $p \leq 0.01$, the risk of obtaining the observed effect by chance is less than 1 percent.

For the purpose of the research, p-values of ≤ 0.05 and ≤ 0.01 are highlighted and interpreted as statistically significant as suggested by Anastasi (1988).

4.9 RESEARCH HYPOTHESES

Research hypotheses were formulated for the research to indicate whether a relationship between the tests and performance exists. The following hypotheses were set:

Hypothesis 1. There is a significant relationship between the personality questionnaire raw scores and job performance.

Hypothesis 2. There is a significant relationship between the ability test raw scores and job performance.

Hypothesis 3. There is a significant relationship between the test battery and job performance.

On processing the research data it was found that there were 18 different regressions which made the data difficult to handle. In an effort to streamline the data analysis and to avoid the occurrence of obtaining mere coincidental correlations, specific hypotheses were drawn up pertaining to Extreme and High Importance competencies of the job as determined through the WPS (see Table 4 in Section 4.4). Hypotheses were set for each of these competencies, eight in total, as well as the two performance measures (namely, Average Call Handling Time and Quality) in terms of how the CCSQ7.2 and ability tests would load onto these items/competencies. The hypotheses were reviewed by three Industrial Psychologists at SHL. The hypotheses were utilised in the multiple regressions and are presented below:

- Relating to Customers correlates positively with Self-Control, Empathic, Sociable, Flexible and Energetic.

- Customer Focus correlates positively with Self-Control, Empathic, Sociable, Results Oriented, Conscientious and Energetic.
- Quality Orientation correlates positively with Analytical, Structured, Detail Conscious, Conscientious, Results Oriented, Basic Checking and Audio Checking.
- Communicating Orally correlates positively with Persuasive, Empathic, Sociable, Basic Checking and Audio Checking.
- Convincing correlates positively with Persuasive, Analytical, Innovative, Competitive, Sociable, Results Oriented and negatively with Modest.
- Team Working correlates positively with Self-Control, Empathic, Participative, Sociable and negatively with Competitive.
- Results Driven correlates positively with Conscientious, Competitive, Results Oriented, Energetic, Basic Checking and Audio Checking.
- Fact Finding correlates positively with Analytical, Structured, Detail Conscious, Conscientious, Results Oriented, Basic Checking and Audio Checking.
- The quality measure correlates positively with Self-Control, Analytical, Structured, Detail Conscious, Conscientious, Results Oriented, Basic Checking and Audio Checking and negatively with Sociable.
- Average Call Handling Time correlates negatively with Persuasive, Sociable, Structured, Conscientious, Results Oriented, Basic Checking and Audio Checking.

REMARK

In concluding this chapter, the empirical process has been detailed and the framework from which the empirical aims for the research (as presented in Section 1.3.2) will be tested has been provided.

4.10 CHAPTER SUMMARY

This chapter outlined the population and sample. Measuring instruments of the independent and dependent variables and the data gathering procedure were discussed. Data processing was presented and the chapter culminated in the research hypotheses. In Chapter 5 that follows, results are reported and discussed.

CHAPTER 5

RESULTS

In this chapter, the results of the empirical study are presented. The interpretation of results is discussed and results are integrated. The chapter ends in a summary.

5.1 DESCRIPTIVE STATISTICS

Descriptive statistics summarise quantitative data in a manageable and user-friendly way and enable the researcher to obtain a holistic overview of the research data (Durrheim, 2002b; Kaplan & Saccuzzo, 2001). Descriptive statistics were calculated for the sample, the predictors and the criteria and are reported on in this section.

5.1.1 Biographic information of the sample

Biographic data by way of race, gender, age, education level, length of service, time in current position and location were requested for the sample. Table 8 provides an overview of the gender and race distribution of the sample.

TABLE 8. GENDER AND RACE DISTRIBUTION OF SAMPLE (N=140)

Biographic variable	Gender Count	Gender %	Race count	Race %
Female	94	67.14%		
Male	46	32.86%		
African			49	35%
Coloured			37	26.43%
Indian			2	1.43%
White			52	37.14%

In terms of gender, 46 of the operators in the sample were male and 94 were female. All race groups were represented with 35 percent African, 26.4 percent coloured, 1.4

percent Indian and 37.1 percent white. The education level of the sample was requested from the organisation and is presented in Table 9.

TABLE 9. EDUCATION LEVEL OF SAMPLE (N=140)

Biographic variable	Education Count	Education %
Grade 8	1	0.71%
Grade 10	37	26.43%
Grade 11	7	5%
Grade 12	93	66.43%
Tertiary qualification	2	1.42%

Education levels of the sample ranged from grade 8 to tertiary. The bulk of the sample were in possession of a grade 12 certificate (66.4%) followed by 26.4 percent having a grade 10 as their highest education level. Only 1.42 percent of the sample had a tertiary qualification.

Table 10 provides an indication of the average age, years' service and time in the operator position for the sample.

TABLE 10. AGE, LENGTH OF SERVICE AND TIME IN CURRENT POSITION IN YEARS FOR SAMPLE (N=140)

Variable (in years)	Mean	SD	Minimum	Maximum
Age	38.16	6.81	26.00	59.00
Length of service	12.66	5.62	5.00	30.00
Time in current position	8.89	1.46	0.05	10.01

As reflected in Table 10 operators ranged from 26 to 59 in terms of age with a mean age of 38.16 years calculated for the sample. The average length of service was calculated as just over 12 and a half years whilst the average time in the operator position was just over 8 and a half years.

The population for the research consists of call centres located in three geographic areas as defined by the organisation, namely Gauteng, and the Southern and Western regions. The call centres are based in Johannesburg, Port Elizabeth and Cape Town respectively. Table 11 provides an indication of the geographic spread of the sample.

TABLE 11. GEOGRAPHICAL INFORMATION OF SAMPLE (N=140)

Region	Count	%
Gauteng	33	23.57%
Southern	24	17.14%
Western	83	59.29%

The largest number of operators in the sample is based in the Western Region, Cape Town (59%) and the smallest contingent is based in the Southern Region, Port Elizabeth (17%). The balance of the sample (24%) is based in Gauteng.

5.1.2 Descriptive statistics for the predictors

Descriptive statistics were calculated for the predictors of the research, namely the Customer Contact Styles Questionnaire (CCSQ7.2) and the two ability tests, Basic Checking (CP7.1) and Audio Checking (CP8.1). The descriptive statistics were calculated in order to depict the properties of the instruments. The descriptive statistics are presented below.

5.1.2.1 Descriptive statistics for the CCSQ7.2

Descriptive statistics in the form of means, standard deviations, minimums, maximums and reliabilities for the CCSQ7.2 scales are reported in Table 12.

TABLE 12. MEANS, STANDARD DEVIATIONS, MINIMUMS, MAXIMUMS AND ALPHA COEFFICIENTS FOR THE CCSQ7.2 (N=140)

CCSQ Scales	Mean	SD	Minimum	Maximum	Alpha
Persuasive (CR1)	28.64	6.06	15	44	0.69
Self-Control (CR2)	42.61	7.38	25	61	0.78
Empathic (CR3)	48.21	6.74	32	61	0.79
Modest (CR4)	41.60	6.41	25	56	0.67
Participative (CR5)	49.68	8.91	24	65	0.86
Sociable (CR6)	35.89	6.84	21	54	0.76
Analytical (CT1)	38.72	5.81	20	52	0.76
Innovative (CT2)	39.39	6.39	24	56	0.76
Flexible (CT3)	33.20	5.47	21	44	0.74
Structured (CT4)	39.74	5.90	17	53	0.79
Detail Conscious (CT5)	37.26	4.15	24	47	0.66
Conscientious (CT6)	36.15	5.11	21	48	0.76
Resilience (CE1)	35.70	6.57	18	51	0.64
Competitive (CE2)	29.85	7.85	9	46	0.82
Results Oriented (CE3)	34.58	4.82	22	46	0.69
Energetic (CE4)	31.34	5.83	17	44	0.77
Consistency (CCO)	54.05	4.99	42	68	

In dealing with personality assessment, coefficients that are too low imply that the scale includes some ambiguity with its items whilst those that are too high lack bandwidth and suggest a factor that is potentially too narrow and merely duplicates a central idea. Optimum coefficients are suggested in the range of 0.60 to 0.80 (SHL, 2006). The alpha coefficients presented in Table 12 range from 0.64 to 0.86 and are therefore in line with acceptable reliabilities for personality.

5.1.2.2 Descriptive statistics for the ability tests

The means, standard deviations, minimums, maximums and reliability scores for the two ability tests, Basic Checking (CP7.1) and Audio Checking (CP8.1), are reported in Table 13.

TABLE 13. MEANS, STANDARD DEVIATIONS, MINIMUMS, MAXIMUMS AND ALPHA COEFFICIENTS FOR THE ABILITY TESTS (N=140)

Ability test	Mean	SD	Minimum	Maximum	Alpha
Basic Checking (CP7.1)	50.21	10.32	22	73	0.93
Audio Checking (CP8.1)	38.06	8.50	15	55	0.86

The reliability score of 0.93 for the Basic Checking ability test (CP7.1) is as reported in the empirical chapter (Section 4.4.2.3). The reliability score for the Audio Checking ability test (CP8.1) confirms the reliability score reported in Section 4.4.3.3. Optimum coefficients of higher than 0.70 are recommended for abilities. Within a selection context coefficients greater than 0.80 are preferred (Baron, Hill, Janman & Schmidt, 1997). The alpha coefficients presented in Table 13 range from 0.86 to 0.93 and are therefore in line with acceptable reliabilities for abilities and more specifically and relevant to the research, abilities within a selection context.

5.1.3 Descriptive statistics for the criteria

As highlighted in Section 4.5, supervisors were requested to assess operators in the sample on the competencies in the Customer Contact Competency Inventory (CCCI) as a subjective measure of performance. Descriptive statistics for the criteria in the form of the CCCI competencies are presented in Table 14. The CCCI scales relating to the Extremely important competencies as highlighted by the job analysis (Section 4.4) are indicated with an asterisk (*). Highly important competencies as per the job analysis are indicated with two asterisks (**) in the table. Reliabilities for the CCCI within the range of 0.78 to 0.91 were found. These reliabilities are in line with those reported for manager assessments in Section 4.5.3.

TABLE 14. MEANS, STANDARD DEVIATIONS, MINIMUMS, MAXIMUMS AND ALPHA COEFFICIENTS FOR CCCI COMPETENCIES (N=140)

CCCI Competency	Mean	SD	Minimum	Maximum	Alpha
Relating to Customers (P1)*	40.86	6.83	17	54	0.85
Convincing (P2)*	32.64	6.29	18	53	0.80
Communicating Orally (P3)*	38.79	6.37	18	52	0.80
Communicating in Writing (P4)	34.26	7.64	16	55	0.88
Team Working (P5)**	39.16	6.63	20	52	0.83
Fact Finding (I1)**	36.69	6.51	19	52	0.81
Problem Solving (I2)	31.35	7.36	11	49	0.85
Business Awareness (I3)	32.75	6.14	17	48	0.78
Specialist Knowledge (I4)	33.81	7.92	15	53	0.88
Quality Orientation (D1)*	39.63	8.74	21	56	0.91
Organisation (D2)	33.10	6.85	15	54	0.82
Reliability (D3)	41.31	7.02	19	53	0.82
Customer Focus (E1)*	41.81	7.46	20	55	0.89
Resilient (E2)	33.15	8.34	11	51	0.87
Results Driven (E3)*	35.21	8.79	13	52	0.89
Using Initiative (E4)	35.53	7.74	15	52	0.86

* Extremely important competencies as per WPS

** Highly important competencies as per WPS

Performance data in the form of Average Call Handling Time and quality scores were requested from the organisation as additional criterion data for the sample as discussed in Section 4.6. Descriptive statistics in the form of sample size (N), means, standard deviations, minimums and maximums for Average Call Handling Time are presented in Table 15.

TABLE 15. SAMPLE SIZE, MEANS, STANDARD DEVIATIONS, MINIMUMS AND MAXIMUMS FOR AVERAGE CALL HANDLING TIME

Month	N	Mean	SD	Minimum	Maximum
April05	117	30.71	7.00	19.91	67.02
May05	128	31.69	8.17	20.10	65.60
June05	130	30.15	5.99	20.13	50.02
July05	129	29.72	5.15	20.30	45.83
August05	131	29.47	4.44	19.80	43.78
September05	129	27.56	3.41	18.54	39.17
October05	135	28.14	3.36	19.83	38.85
November05	134	28.06	3.38	20.45	40.72
December05	132	27.50	3.43	20.03	40.40
January06	133	28.14	3.59	20.74	41.40
February06	134	28.24	3.81	19.77	44.30
March06	133	28.06	3.93	19.23	42.83
Average Call Handling Time	138	29.00	3.99	20.40	42.64

Means ranging from 27.50 to 31.69 are reported for Average Call Handling Time. A mean of 29.00 was calculated as the average for the 12 month period, April 2005 to March 2006. Descriptive statistics in the form of sample size (N), means, standard deviations, minimums and maximums for quality are presented in Table 16.

TABLE 16. SAMPLE SIZE, MEANS, STANDARD DEVIATIONS, MINIMUMS AND MAXIMUMS FOR QUALITY

Month	N	Mean	SD	Minimum	Maximum
April05	92	94.04	5.47	77.50	100.00
May05	98	92.11	8.95	52.14	100.00
June05	100	91.06	7.07	70.40	100.00
July05	99	91.92	7.22	68.00	100.00
August05	99	90.25	7.77	63.20	100.00
September05	99	89.54	8.65	55.00	100.00
October05	103	89.02	9.20	55.20	100.00
November05	101	91.53	6.88	67.80	100.00
December05	100	93.15	7.07	58.80	100.00
January06	100	92.52	7.38	62.20	100.00
February06	105	92.23	7.38	62.60	100.00
March06	103	93.56	5.63	79.17	100.00
Average Quality	106	91.82	5.44	75.69	99.75

As per Table 16 means ranging from 89.02 to 94.04 are reported for Quality. A mean of 91.82 was calculated for Average Quality for the 12 month period, April 2005 to March 2006.

5.2 CORRELATION RESULTS

A number of correlations were performed on the research data. This included correlations within each of the measures as well as correlations between the research measures. The outcome of these correlations is presented and discussed in this section.

5.2.1 Intercorrelations

Intercorrelations were firstly calculated within each of the instruments for the dependent and independent variables. The calculation was completed to check the overlap between the scales within the instruments. For the purpose of analysis and interpretation p-values of $p \leq 0.01$ and $p \leq 0.05$ were considered as significant levels as suggested by Anastasi (1988).

5.2.1.1 Intercorrelations for predictors

The intercorrelations for the personality measure, Customer Contact Styles Questionnaire Version 7.2 (CCSQ7.2), are reflected in Table 17. Statistically significant correlations range from $r=0.17$ to $r=0.56$. The strongest correlation of $r=0.56$ ($p \leq 0.01$) is reported for Structured (CT4) and Detail Conscious (CT5). The intercorrelations between the CCSQ7.2 scales are acceptable and in line with previous study findings (Baron et al., 1997).

TABLE 17. INTERCORRELATIONS FOR CCSQ7.2 (N=140)

	CCO	CE1	CE2	CE3	CE4	CR1	CR2	CR3	CR4	CR5	CR6	CT1	CT2	CT3	CT4	CT5	CT6
Consistency (CCO)	1.00																
Resilience (CE1)	-0.13	1.00															
Competitive (CE2)	-0.18*	0.00	1.00														
Results Oriented (CE3)	0.14	0.04	0.40**	1.00													
Energetic (CE4)	-0.17*	0.33**	0.15	0.22**	1.00												
Persuasive (CR1)	-0.00	0.14	0.11	0.27**	0.17*	1.00											
Self-Control (CR2)	0.09	0.44**	0.02	0.07	0.27**	0.05	1.00										
Empathic (CR3)	0.25**	0.01	-0.08	-0.05	0.04	0.11	0.31**	1.00									
Modest (CR4)	0.10	0.12	-0.08	-0.03	0.02	0.01	0.17*	0.24**	1.00								
Participative (CR5)	-0.06	0.07	0.00	0.20*	0.19*	0.22**	0.24**	0.17*	-0.01	1.00							
Sociable (CR6)	-0.19*	0.21**	0.12	0.32**	0.19*	0.39**	0.12	0.14	-0.09	0.41**	1.00						
Analytical (CT1)	0.30**	0.16	0.13	0.45**	0.09	0.42**	0.04	0.14	0.14	0.16	0.27**	1.00					
Innovative (CT2)	-0.27	0.15	0.38**	0.43**	0.39**	0.50**	0.22**	0.06	-0.01	0.17*	0.27**	0.50**	1.00				
Flexible (CT3)	0.12	0.23**	0.04	0.46**	0.22**	0.20*	0.29**	0.04	-0.07	0.21**	0.32**	0.45**	0.33**	1.00			
Structured (CT4)	0.23**	0.03	0.11	0.38**	0.11	0.16	0.19*	0.17*	0.14	0.16	0.12	0.49**	0.36**	0.19*	1.00		
Detail Conscious (CT5)	0.36**	-0.17*	-0.02	0.26**	0.08	0.11	0.12	0.20*	0.13	0.10	0.18*	0.53**	0.22**	0.26**	0.56**	1.00	
Conscientious (CT6)	0.41**	0.08	-0.00	0.27**	0.09	0.03	0.21**	0.30**	0.23**	0.15	-0.01	0.37**	0.25**	0.20*	0.50**	0.40**	1.00

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

The intercorrelations for the ability tests, Basic Checking (CP7.1) and Audio Checking (CP8.1), are presented in Table 18.

TABLE 18. INTERCORRELATIONS FOR CP7.1 AND CP8.1 (N=140)

	Basic Checking (CP7.1)	Audio Checking (CP8.1)
Basic Checking (CP7.1)	1.00	
Audio Checking (CP8.1)	0.65**	1.00

* Indicates correlation coefficients with p-values ≤ 0.05

** Indicates correlation coefficients with p-values ≤ 0.01

Intercorrelations for abilities highlight a challenge. The intercorrelations imply both a similarity and a difference between the tests (Cronbach, 1970). If the intercorrelations are too high they potentially imply that the two instruments are measuring the same thing. Yet the correlations need to be high enough to show the needed consistency.

The high correlation ($r=0.65$) between the two ability tests as presented in Table 18 is to be expected as both tests measure ability for checking. General reasoning also plays a role for abilities and reflects a shared variance in performance across ability scores (Kaplan & Saccuzzo, 2001). The g-factor therefore plays a role with correlations for abilities and should be considered in the interpretation of the magnitude of coefficients (Anastasi, 1988).

5.2.1.2 Intercorrelations for criteria

Intercorrelations for the subjective measure of performance were calculated first. The intercorrelations for the Customer Contact Competency Inventory (CCCI) are presented in Table 19 in this regard.

TABLE 19. INTERCORRELATIONS FOR CCCI (N=140)

	P1	P2	P3	P4	P5	I1	I2	I3	I4	D1	D2	D3	E1	E2	E3	E4
Relating to Customers (P1)	1.00															
Convincing (P2)	0.43**	1.00														
Communicating Orally (P3)	0.34**	0.47**	1.00													
Communicating in Writing (P4)	0.02	0.36**	0.63**	1.00												
Team Working (P5)	0.50**	0.52**	0.38**	0.18*	1.00											
Fact Finding (I1)	0.44**	0.66**	0.53**	0.42**	0.38**	1.00										
Problem Solving (I2)	0.36**	0.76**	0.40**	0.32**	0.36**	0.71**	1.00									
Business Awareness (I3)	0.32**	0.48**	0.49**	0.39**	0.28**	0.66**	0.55**	1.00								
Specialist Knowledge (I4)	0.21**	0.37**	0.44**	0.27**	0.15	0.65**	0.48**	0.67**	1.00							
Quality Orientation (D1)	0.64**	0.30**	0.38**	0.16	0.41**	0.53**	0.48**	0.42**	0.33**	1.00						
Organisation (D2)	0.45**	0.35**	0.24**	0.20*	0.25**	0.51**	0.55**	0.41**	0.35**	0.66**	1.00					
Reliability (D3)	0.57**	0.21*	0.19*	-0.05	0.33**	0.35**	0.29**	0.26**	0.27**	0.67**	0.64**	1.00				
Customer Focus (E1)	0.82**	0.31**	0.34**	0.01	0.41**	0.38**	0.29**	0.34**	0.22**	0.78**	0.48**	0.64**	1.00			
Resilient (E2)	0.44**	0.50**	0.35**	0.20*	0.47**	0.61**	0.61**	0.49**	0.44**	0.54**	0.43**	0.41**	0.42**	1.00		
Results Driven (E3)	0.42**	0.27**	0.36**	0.20*	0.27**	0.52**	0.50**	0.46**	0.34**	0.82**	0.66**	0.54**	0.61**	0.54**	1.00	
Using Initiative (E4)	0.58**	0.58**	0.42**	0.27**	0.45**	0.66**	0.70**	0.45**	0.40**	0.69**	0.60**	0.57**	0.52**	0.66**	0.62**	1.00

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

Intercorrelations at statistically significant levels for the Customer Contact Competency Inventory (CCCI) are on the high side and larger than would be expected with correlation coefficients ranging from $r=0.18$ ($p\leq 0.05$) for Communicating in Writing (P4) and Team Working (P5) to $r=0.82$ ($p\leq 0.01$) for Quality Orientation (D1) and Results Driven (E3). These slightly higher intercorrelations need to be noted in interpreting the research findings and may indicate a specific frame of reference on the part of supervisors when completing the questionnaires.

Intercorrelations for the additional criterion data, namely Average Call Handling Time and Quality, were calculated separately and are reported in the tables that follow. The intercorrelations for the hard criteria by way of Average Call Handling Time are presented in Table 20. The quality measure intercorrelations follow in Table 21.

As highlighted in Section 4.7.2 intercorrelations for Average Call Handling Time and Quality were calculated for the different months in each criterion. As is evident in Table 20 and 21, the correlations are high as expected. For this reason and to aid data processing, an average score for Average Call Handling Time and Quality were calculated and utilised in the data analysis going forward. It was decided to work with an average score as opposed to a total score for these measures so as not to disadvantage those operators that did not have data for all the months, as would be the case should an operator have been on leave.

TABLE 20. INTERCORRELATIONS FOR AVERAGE CALL HANDLING TIME

	April05	May05	June05	July05	August05	September05	October05	November05	December05	January06	February06	March06	Average Call Handling Time (CHT)
April05	1.00 N=117												
May05	0.77** N=109	1.00 N=128											
June05	0.85** N=111	0.92** N=126	1.00 N=130										
July05	0.83** N=110	0.82** N=124	0.93** N=127	1.00 N=129									
August05	0.77** N=111	0.73** N=124	0.88** N=127	0.91** N=129	1.00 N=131								
September05	0.69** N=109	0.69** N=122	0.79** N=125	0.80** N=127	0.87** N=129	1.00 N=129							
October05	0.58** N=114	0.42** N=126	0.64** N=128	0.71** N=128	0.83** N=130	0.81** N=129	1.00 N=135						
November05	0.57** N=113	0.27** N=125	0.53** N=127	0.64** N=127	0.78** N=129	0.75** N=128	0.92** N=134	1.00 N=134					
December05	0.52** N=111	0.23** N=123	0.51** N=125	0.61** N=124	0.76** N=126	0.70** N=125	0.89** N=131	0.95** N=130	1.00 N=132				
January06	0.46** N=113	0.21* N=125	0.47** N=127	0.56** N=126	0.72** N=128	0.68** N=127	0.86** N=132	0.92** N=131	0.96** N=131	1.00 N=133			
February06	0.49** N=114	0.24** N=125	0.51** N=127	0.60** N=126	0.78** N=128	0.70** N=126	0.88** N=132	0.93** N=131	0.96** N=130	0.96** N=131	1.00 N=134		
March06	0.49** N=112	0.16 N=124	0.40** N=126	0.53** N=125	0.67** N=127	0.58** N=125	0.79** N=131	0.85** N=130	0.87** N=129	0.88** N=130	0.92** N=132	1.00 N=133	
CHT	0.81** N=117	0.71** N=128	0.88** N=130	0.92** N=129	0.96** N=131	0.90** N=129	0.88** N=135	0.84** N=134	0.81** N=132	0.79** N=133	0.83** N=134	0.75** N=133	1.00 N=138

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

TABLE 21. INTERCORRELATIONS FOR QUALITY

	April05	May05	June05	July05	August05	September05	October05	November05	December05	January06	February06	March06	Average Quality (QUAL)
April05	1.00 N=92												
May05	0.59** N=89	1.00 N=98											
June05	0.37** N=91	0.45** N=96	1.00 N=100										
July05	0.46** N=90	0.48** N=95	0.52** N=98	1.00 N=99									
August05	0.35** N=89	0.50** N=94	0.57** N=97	0.40** N=98	1.00 N=99								
September05	0.43** N=89	0.40** N=93	0.40** N=96	0.50** N=97	0.53** N=97	1.00 N=99							
October05	0.42** N=91	0.36** N=96	0.53** N=98	0.45** N=98	0.71** N=98	0.55** N=99	1.00 N=103						
November05	0.48** N=88	0.55** N=94	0.52** N=95	0.58** N=95	0.59** N=96	0.62** N=95	0.64** N=99	1.00 N=101					
December05	0.49** N=87	0.46** N=92	0.34** N=94	0.41** N=93	0.57** N=93	0.50** N=94	0.47** N=98	0.48** N=97	1.00 N=100				
January06	0.43** N=89	0.53** N=93	0.40** N=95	0.52** N=94	0.42** N=95	0.55** N=94	0.44** N=98	0.59** N=97	0.54** N=95	1.00 N=100			
February06	0.55** N=91	0.53** N=97	0.37** N=99	0.42** N=98	0.57** N=98	0.61** N=98	0.57** N=102	0.53** N=100	0.73** N=99	0.62** N=99	1.00 N=105		
March06	0.44** N=89	0.48** N=95	0.26** N=97	0.30** N=96	0.47** N=96	0.49** N=96	0.38** N=100	0.50** N=98	0.59** N=97	0.46** N=97	0.54** N=103	1.00 N=103	
QUAL	0.67** N=92	0.73** N=98	0.65** N=100	0.69** N=99	0.77** N=99	0.76** N=99	0.76** N=103	0.81** N=101	0.74** N=100	0.74** N=100	0.80** N=105	0.66** N=103	1.00 N=106

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

5.2.2 Correlations

Correlations help to determine the relationship between variables. A number of correlations were calculated in line with the objectives of the research and for the purpose of testing the research hypotheses. Correlations between the criteria and predictors are reported on in Section 5.2.2.1 and 5.2.2.2. In presenting the results correlation coefficients are depicted. For the purpose of analysis and interpretation p-values of ≤ 0.01 and ≤ 0.05 were considered statistically significant as suggested by Anastasi (1988).

In interpreting the correlations the guidelines suggested by Cohen (1988) were followed. In terms of these writings, correlations of $r=0.10$ show a small effect size. Correlations of $r=0.30$ show a medium effect size whilst those of $r=0.50$ indicate a large effect size. These guidelines assist in quantifying and reporting on the effect sizes of the findings.

5.2.2.1 Correlation between CCCI behavioural criteria and predictors

Correlations between the Customer Contact Competency Inventory (CCCI) behavioural criteria and predictors, that is the Customer Contact Styles Questionnaire (CCSQ7.2) and Basic Checking (CP7.1) and Audio Checking (CP8.1) raw scores are presented in Table 22.

Table 22. Correlations between CCCI behavioural criteria and predictors (N=140)

	P1	P2	P3	P4	P5	I1	I2	I3	I4	D1	D2	D3	E1	E2	E3	E4
Consistency (CCO)	0.13	0.09	0.08	0.03	0.09	0.18*	0.19*	0.02	0.06	0.22**	0.12	0.19*	0.18*	0.14	0.08	0.19*
Resilience (CE1)	0.10	0.05	-0.10	-0.05	0.09	0.06	0.06	0.06	0.09	-0.04	0.09	-0.07	0.03	0.09	-0.01	-0.01
Competitive (CE2)	0.08	0.10	-0.17*	0.07	0.09	0.02	0.13	0.12	0.02	0.04	0.18*	0.04	-0.01	0.05	0.02	0.07
Results Oriented (CE3)	0.16	0.22**	0.09	0.12	0.16	0.18*	0.34**	0.24**	0.13	0.36**	0.34**	0.19*	0.21**	0.22**	0.36**	0.28**
Energetic (CE4)	0.05	0.17*	-0.02	0.00	0.07	0.03	0.22**	0.16	0.08	-0.03	0.08	-0.07	-0.01	0.11	0.05	0.05
Persuasive (CR1)	0.01	0.12	-0.06	-0.06	0.07	-0.08	0.04	0.02	-0.08	-0.12	-0.04	-0.08	-0.04	-0.07	-0.10	-0.10
Self-Control (CR2)	0.18*	-0.02	-0.11	-0.09	-0.02	0.03	0.06	0.03	-0.03	0.10	0.06	0.05	0.19*	0.14	0.06	0.07
Empathic (CR3)	-0.00	-0.03	-0.09	-0.09	0.02	0.01	0.06	0.02	-0.06	0.02	-0.04	-0.07	0.04	0.01	0.04	0.02
Modest (CR4)	0.09	-0.00	0.03	0.01	0.03	0.22**	0.13	0.15	0.16	0.14	0.19*	0.19*	0.08	0.10	0.15	0.16
Participative (CR5)	-0.00	0.11	0.02	-0.04	0.11	-0.09	0.01	-0.09	-0.17*	-0.06	-0.14	-0.10	-0.02	-0.10	-0.06	-0.05
Sociable (CR6)	0.08	0.15	-0.01	-0.11	0.16	-0.10	0.10	0.03	-0.11	-0.10	0.00	-0.12	0.01	-0.10	-0.07	-0.08
Analytical (CT1)	0.05	0.23**	0.04	0.11	0.01	0.19*	0.34**	0.14	0.11	0.10	0.20*	-0.01	0.06	0.10	0.14	0.19*
Innovative (CT2)	-0.00	0.18*	-0.15	0.05	-0.02	0.01	0.21**	0.07	-0.03	-0.09	0.07	-0.08	-0.09	0.02	-0.06	0.13
Flexible (CT3)	0.06	0.18*	0.07	0.08	0.06	0.09	0.20*	0.04	-0.04	0.05	0.11	-0.12	0.09	0.07	0.16	0.08
Structured (CT4)	0.32**	0.27**	0.23**	0.23**	0.18*	0.32**	0.36**	0.26**	0.23**	0.33**	0.26**	0.22**	0.29**	0.22**	0.28**	0.35**
Detail Conscious (CT5)	0.10	0.14	0.12	0.06	0.09	0.17*	0.22**	0.12	0.08	0.17*	0.08	0.04	0.15	0.10	0.11	0.12
Conscientious (CT6)	0.06	0.05	-0.05	0.09	0.03	0.12	0.17*	0.07	0.13	0.19*	0.18*	0.12	0.07	-0.00	0.13	0.14
Basic Checking (CP7.1)	0.13	0.17*	0.20*	0.18*	0.09	0.34**	0.25**	0.27**	0.32**	0.27**	0.23**	0.29**	0.18*	0.20*	0.26**	0.30**
Audio Checking (CP8.1)	0.09	0.27**	0.33**	0.20*	0.16	0.39**	0.32**	0.28**	0.32**	0.28**	0.18*	0.09	0.10	0.22**	0.28**	0.37**

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

P1	Relating to Customers	I1	Fact Finding	D1	Quality Orientation	E1	Customer Focus
P2	Convincing	I2	Problem Solving	D2	Organisation	E2	Resilient
P3	Communicating Orally	I3	Business Awareness	D3	Reliability	E3	Results Driven
P4	Communicating in Writing	I4	Specialist Knowledge			E4	Using Initiative
P5	Team Working						

Small to moderate correlations were found between the CCSQ7.2 predictor and the CCCI behavioural criteria with 58 of these correlations being statistically significant. The largest number of statistically significant correlations with a moderate effect size was found for Structured (CT4) and Results Oriented (CE3) and most of the CCCI criteria.

A validation study with the selection of air traffic controllers found that correlations between abilities and performance tend to be more consistent and higher than correlations between personality scales and performance (SHL, 2004). This view was supported in the research where small to moderate statistically significant correlations were found between most of the CCCI behavioural criteria and the ability tests CP7.1 and CP8.1. The strongest correlations for each of the ability tests were found with Fact Finding (I1). A correlation of $r=0.34$ ($p \leq 0.01$) was found between Basic Checking (CP7.1) and Fact Finding (I1). A correlation of $r=0.39$ ($p \leq 0.01$) was found between Audio Checking (CP8.1) and Fact Finding (I1).

As reported in Section 4.9 specific hypotheses were formulated to guide data processing and analysis. These hypotheses were formulated to guide the correlations as a result of the number of predictors and criteria. Due to the amount of data (18 regressions in total) it was envisaged that coincidental correlations would be found and in an effort to avoid this occurrence specific hypotheses were formulated for the Extreme Importance and High Importance competencies as determined in the WPS (Section 4.4). The empirical data in the Customer Contact Styles Questionnaire manual was reviewed to assist in this regard and the hypotheses were reviewed by the researcher and two Industrial Psychologists. As this section deals with the correlation between the CCCI behavioural criteria and predictors, the hypotheses are briefly mentioned here.

Most of the hypothesised correlations correlated higher than $r=0.10$. Some unexpected correlations were, however, found. A statistically significant correlation was found for Customer Focus (E1) and Basic Checking ($r=0.18$). Communicating Orally (P3) showed

a negative correlation with Competitive (CE2) $r=-0.17$ ($p\leq 0.05$) and Convincing (P2) showed a correlation of $r=0.17$ ($p\leq 0.05$) with Energetic (CE4). For Fact Finding (I1) an unexpected correlation was found with Modest (CR4), $r=0.22$ ($p\leq 0.01$).

5.2.2.2 Correlation between performance data and predictors

Correlations were calculated between the hard performance measures captured as Average Call Handling Time and Quality data for the period April 2005 to March 2006 and the predictor as measured by the CCSQ7.2 and the two ability tests, CP7.1 and CP8.1. A summary of these correlations is presented in Table 23 utilising the Average Call Handling Time and Average Quality scores.

TABLE 23. CORRELATIONS BETWEEN PERFORMANCE DATA AND PREDICTORS

	Average Call Handling Time (N=138)	Average Quality (N=106)
Consistency (CCO)	-0.15	0.27**
Resilience (CE1)	0.05	-0.11
Competitive (CE2)	-0.04	0.01
Results Oriented (CE3)	-0.23**	0.42**
Energetic (CE4)	0.01	-0.09
Persuasive (CR1)	0.24**	-0.17
Self-Control (CR2)	0.06	0.18
Empathic (CR3)	0.07	0.10
Modest (CR4)	-0.10	0.06
Participative (CR5)	0.21**	0.02
Sociable (CR6)	0.21**	-0.21*
Analytical (CT1)	0.05	0.11
Innovative (CT2)	0.11	0.00
Flexible (CT3)	-0.11	0.14
Structured (CT4)	-0.05	0.38**
Detail Conscious (CT5)	0.01	0.28**
Conscientious (CT6)	-0.16	0.35**
Basic Checking (CP7.1)	-0.27**	0.28**
Audio Checking (CP8.1)	-0.26**	0.39**

* Indicates correlation coefficients with p-values ≤ 0.05

** Indicates correlation coefficients with p-values ≤ 0.01

For the personality predictor CCSQ7.2 and Average Call Handling Time, statistically significant correlations were found for Sociable (CR6) $r=0.21$, Participative (CR5) $r=0.21$, Results Oriented (CE3) $r=-0.23$ and Persuasive (CR1) $r=0.24$. Statistically significant correlations were also found between the CCSQ7.2 and Average Quality with $r=-0.21$ for Sociable (CR6), $r=0.28$ for Detail Conscious (CT5), $r=0.35$ for Conscientious (CT6), $r=0.38$ for Structured (CT4) and $r=0.42$ for Results Oriented (CE3).

Moderate statistically significant correlations were found between both ability tests and both additional criterion measures. A negative statistically significant correlation of $r=-0.27$ was found for Basic Checking (CP7.1) and Average Call Handling Time, whilst a correlation of $r=0.28$ ($p\leq 0.01$) was found between Basic Checking (CP7.1) and Quality.

Moderate statistically significant correlations were also found between Audio Checking and Average Call Handling Time and Quality at $r=-0.26$ and $r=0.39$ ($p\leq 0.01$) respectively. The negative correlations between the ability tests and Average Call Handling Time are to be expected due to the way the measure is expressed as discussed in Section 4.6.1. The shorter the call, the better the operator's performance.

In terms of the two hypotheses set to guide the data processing and analysis for the additional criterion data the hypothesised correlations for Quality were found at levels higher than $r=0.10$. Most of the hypothesised correlations for Average Call Handling Time were found as expected. Unexpectedly however, Persuasive (CR1) and Sociable (CR6) showed positive correlations of $r=0.24$ ($p\leq 0.01$) and $r=0.21$ ($p\leq 0.01$) to Average Call Handling Time respectively.

5.2.2.3 Correlation between criteria and biographic data

Correlations were calculated between the biographic data and the criterion data to determine the effect of these moderator variables and are reported on in Table 24. In terms of the biodata, gender was coded male 1, female 2. Race was coded black (that is African, Indian, coloured) 0 and white 1. The grouping of African, Indian and coloured

into a group 'black' was in accordance with the Employment Equity Act (No.55 of 1998). For all the correlations N=140 excepting those for Average Quality and Average Call Handling Time where N=106 and N=138 respectively.

TABLE 24. CORRELATIONS BETWEEN CRITERIA AND BIOGRAPHIC DATA

	Race coded	Gender recoded	Years' service	Time in job in years	Age	Age*Years' service	Education level
Relating to Customers (P1)	-0.01	0.12	0.06	-0.00	-0.02	0.09	0.13
Convincing (P2)	-0.26**	-0.06	-0.25**	-0.28**	-0.20*	-0.24**	0.15
Communicating Orally (P3)	-0.15	0.08	-0.29**	-0.15	-0.25**	-0.23**	0.11
Communicating in Writing (P4)	-0.21**	-0.00	-0.31**	-0.14	-0.18*	-0.28**	0.16
Team Working (P5)	-0.18*	-0.02	-0.09	-0.12	-0.19*	-0.15	0.07
Fact Finding (I1)	-0.12	0.05	-0.25**	-0.19*	-0.31**	-0.18*	0.21**
Problem Solving (I2)	-0.22**	-0.01	-0.30**	-0.28**	-0.24**	-0.28**	0.16
Business Awareness (I3)	-0.09	0.06	-0.22**	-0.06	-0.24**	-0.15	0.31**
Specialist Knowledge (I4)	-0.06	0.08	-0.14	-0.01	-0.24**	-0.01	0.18*
Quality Orientation (D1)	-0.03	0.14	-0.02	0.04	-0.16	0.03	0.11
Organisation (D2)	-0.07	0.12	-0.01	0.03	-0.05	-0.02	0.15
Reliability (D3)	0.05	0.19*	0.17*	0.21**	0.08	0.17*	0.06
Customer Focus (E1)	0.01	0.06	0.09	0.10	-0.08	0.13	0.15
Resilient (E2)	-0.26**	0.16	-0.20*	-0.13	-0.17*	-0.15	0.10
Results Driven (E3)	-0.09	0.11	-0.16	-0.01	-0.21*	-0.13	0.11
Using Initiative (E4)	-0.23**	0.09	-0.19*	-0.05	-0.18*	-0.15	0.13
Average Call Handling Time	0.06	-0.01	0.18*	0.01	0.21**	0.07	-0.02
Average Quality	-0.22*	0.22*	-0.20*	-0.02	-0.23*	-0.16	0.23*

* Indicates correlation coefficients with p-values ≤ 0.05

** Indicates correlation coefficients with p-values ≤ 0.01

Race (to a lesser extent), years' service and age correlated significantly. As a result of these significant correlations partial correlations were calculated to determine the relationship between the predictors and criteria with the effect of race, years' service and age removed. Partial correlations were calculated and correlations are reported on in Table 25. The correlations without removing the effect of race, years' service and age are firstly presented. Correlations were then once again calculated with age and years' service and then with race, age and years' service partialled. The correlations changed very little. These variables were therefore not taken into account when processing the regressions.

TABLE 25. PARTIALED CORRELATIONS BETWEEN CRITERIA AND BIOGRAPHIC DATA

		P1	P2	P3	P4	P5	I1	I2	I3	I4
Consistency (CCO)	Normal							0.19*		
	Age/Years' service							0.17		
	Race/Age/Years' service							0.21*		
Competitive (CE2)	Normal			-0.17*						
	Age/Years' service			-0.16						
	Race/Age/Years' service			-0.18						
Results Oriented (CE3)	Normal		0.22**				0.18*	0.34**	0.24**	
	Age/Years' service		0.20*				0.14	0.32**	0.21*	
	Race/Age/Years' service		0.15				0.13	0.29**	0.21*	
Energetic (CE4)	Normal		0.17*					0.22**		
	Age/Years' service		0.17					0.23*		
	Race/Age/Years' service		0.14					0.21*		
Self-Control (CR2)	Normal	0.18*								
	Age/Years' service	0.19								
	Race/Age/Years' service	0.19								
Modest (CR4)	Normal						0.22**			
	Age/Years' service						0.20*			
	Race/Age/Years' service						0.21*			
Analytical (CT1)	Normal		0.23**				0.19*	0.34**		
	Age/Years' service		0.20*				0.15	0.30**		
	Race/Age/Years' service		0.18				0.14	0.29**		
Innovative (CT2)	Normal		0.18*					0.21**		
	Age/Years' service		0.19*					0.23*		
	Race/Age/Years' service		0.15					0.20*		
Flexible (CT3)	Normal		0.18*					0.20*		
	Age/Years' service		0.14					0.16		
	Race/Age/Years' service		0.11					0.14		
Structured (CT4)	Normal	0.32**	0.27**	0.23**	0.23**	0.18*	0.32**	0.36**	0.26**	0.23**
	Age/Years' service	0.32**	0.26**	0.21*	0.22*	0.15	0.29**	0.35**	0.24**	0.20*
	Race/Age/Years' service	0.32**	0.26**	0.21*	0.22*	0.15	0.29**	0.35**	0.24**	0.20*
Detail Conscious (CT5)	Normal						0.17*	0.22**		
	Age/Years' service						0.14	0.20*		
	Race/Age/Years' service						0.14	0.21*		
Conscientious (CT6)	Normal							0.17*		
	Age/Years' service							0.14		
	Race/Age/Years' service							0.17		
Basic Checking (CP7.1)	Normal		0.17*	0.20*	0.18*		0.34**	0.25**	0.27**	0.32**
	Age/Years' service		0.15	0.18	0.17		0.31**	0.24*	0.24**	0.29**
	Race/Age/Years' service		0.21*	0.20*	0.21*		0.33**	0.28**	0.26**	0.31**
Audio Checking (CP8.1)	Normal		0.27**	0.33**	0.20*		0.39**	0.32**	0.28**	0.32**
	Age/Years' service		0.20*	0.25**	0.14		0.29**	0.24**	0.20*	0.24**
	Race/Age/Years' service		0.22*	0.26**	0.15		0.30**	0.25**	0.20*	0.25**

*Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

P1	Relating to Customers	P3	Communicating Orally	P5	Team Working	I2	Problem Solving	I4	Specialist Knowledge
P2	Convincing	P4	Communicating in Writing	I1	Fact Finding	I3	Business Awareness		

TABLE 25 CONTINUED. PARTIALED CORRELATIONS BETWEEN CRITERIA AND BIOGRAPHIC DATA

		D1	D2	D3	E1	E2	E3	E4	CHT	QUAL
Consistency (CCO)	Normal	0.22**		0.19*				0.19*		0.27**
	Age/Years' service	0.18		0.20*				0.17		0.25**
	Race/Age/Years' service	0.20*		0.21*				0.22*		0.30**
Competitive (CE2)	Normal		0.18*							
	Age/Years' service		0.18							
	Race/Age/Years' service		0.17							
Results Oriented (CE3)	Normal	0.36**	0.34**	0.19*	0.21*	0.22*	0.36**	0.28**	-0.23**	0.42**
	Age/Years' service	0.35**	0.34**	0.21*	0.21*	0.21*	0.34**	0.27**	-0.21*	0.41**
	Race/Age/Years' service	0.34**	0.33**	0.21*	0.20*	0.15	0.34**	0.22*	-0.22*	0.37**
Persuasive (CR1)	Normal								0.24**	
	Age/Years' service								0.22*	
	Race/Age/Years' service								0.22*	
Self-Control (CR2)	Normal				0.19*					
	Age/Years' service				0.22*					
	Race/Age/Years' service				0.22*					
Modest (CR4)	Normal		0.19*	0.19*						
	Age/Years' service		0.19	0.21*						
	Race/Age/Years' service		0.20*	0.22*						
Participative (CR5)	Normal								0.21**	
	Age/Years' service								0.20*	
	Race/Age/Years' service								0.20*	
Sociable (CR6)	Normal								0.21**	-0.21*
	Age/Years' service								0.20*	-0.20*
	Race/Age/Years' service								0.20*	-0.24*
Analytical (CT1)	Normal		0.20*					0.19*		
	Age/Years' service		0.20*					0.16		
	Race/Age/Years' service		0.19*					0.15		
Structured (CT4)	Normal	0.33**	0.26**	0.22**	0.29**	0.22**	0.28**	0.35**		0.38**
	Age/Years' service	0.32**	0.25**	0.24*	0.28**	0.20*	0.26**	0.33**		0.37**
	Race/Age/Years' service	0.32**	0.25**	0.24*	0.28**	0.21*	0.26**	0.34**		0.37**
Detail Conscious (CT5)	Normal	0.17*								0.28**
	Age/Years' service	0.16								0.26**
	Race/Age/Years' service	0.16								0.28**
Conscientious (CT6)	Normal	0.19*	0.18*							0.35**
	Age/Years' service	0.19	0.18							0.34**
	Race/Age/Years' service	0.20*	0.18							0.38**
Basic Checking (CP7.1)	Normal	0.27**	0.23**	0.29**	0.18*	0.20*	0.26**	0.30**	-0.27**	0.28**
	Age/Years' service	0.24*	0.23*	0.30**	0.15	0.18	0.23*	0.28**	-0.25**	0.25**
	Race/Age/Years' service	0.26**	0.26**	0.32**	0.17	0.25**	0.26**	0.34**	-0.26**	0.31**
Audio Checking (CP8.1)	Normal	0.28**	0.18*			0.22**	0.28**	0.37**	-0.26**	0.39**
	Age/Years' service	0.24**	0.18			0.16	0.21*	0.33**	-0.19	0.33**
	Race/Age/Years' service	0.24**	0.19			0.18	0.22*	0.35**	-0.19	0.35**

* Indicates correlation coefficients with p-values <=0.05

** Indicates correlation coefficients with p-values <=0.01

D1	Quality Orientation	D3	Reliability	E2	Resilient	E4	Using Initiative	QUAL	Average Quality
D2	Organisation	E1	Customer Focus	E3	Results Driven	CHT	Average Call Handling Time		

5.3 REGRESSION ANALYSIS

Multiple regression analyses were used to investigate the relationship between the dependent and independent variables. A standard regression was calculated for each of the Extreme Importance and High Importance competencies as highlighted by the job analysis. CCSQ7.2 scales and abilities were entered as hypothesised in Section 4.9.

The guidelines suggested by Cohen (1988) in interpreting the correlations were followed. In terms of these suggestions, correlations of $r=0.10$ show a small effect size. Correlations of $r=0.30$ show a medium effect size whilst those of $r=0.50$ indicate a large effect size. These guidelines assist in quantifying and reporting on the effect sizes of the correlations.

5.3.1 Regression for dependent variable: Relating to Customers

It was hypothesised that Relating to Customers (P1) correlates positively with Self-Control (CR2), Empathic (CR3), Sociable (CR6), Flexible (CT3) and Energetic (CE4). As presented in Table 26, a multiple correlation of $R=0.20$ was found which is a small to moderate effect size. It explained 4 percent of the total variance.

TABLE 26. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: RELATING TO CUSTOMERS

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.20					
R-squared	0.04					
Adjusted R-squared	0.00					
Standard Error of Estimate	6.82					
F(5,134)=1.09, $p<0.37$						
	BETA	STD.ERR.	B	STD.ERR.	(t134)	p-LEVEL
Intercept			35.20	6.00	5.87	0.00
Energetic (CE4)	-0.01	0.09	-0.01	0.11	-0.11	0.91
Self-Control (CR2)	0.20	0.10	0.18	0.09	2.08	0.04
Empathic (CR3)	-0.07	0.09	-0.07	0.09	-0.82	0.41
Sociable (CR6)	0.07	0.09	0.07	0.09	0.77	0.44
Flexible (CT3)	-0.02	0.09	-0.02	0.12	-0.19	0.85

5.3.2 Regression for dependent variable: Convincing

It was hypothesised that Convincing (P2) correlates positively with Persuasive (CR1), Analytical (CT1), Innovative (CT2), Competitive (CE2), Sociable (CR6), Results Oriented (CE3) and negatively with Modest (CR4). As per Table 27, for Convincing (P2), a multiple correlation of $R=0.28$ was obtained which is moderate effect size. It explained 8 percent of the total variance.

TABLE 27. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: CONVINCING

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.28					
R-squared	0.08					
Adjusted R-squared	0.03					
Standard Error of Estimate	6.20					
F(7,132)=1.57, p<0.15						
	BETA	STD.ERR.	B	STD.ERR.	(t132)	p-LEVEL
Intercept			18.29	5.80	3.15	0.00
Competitive (CE2)	0.01	0.10	0.01	0.08	0.11	0.91
Results Oriented (CE3)	0.11	0.10	0.14	0.14	1.05	0.30
Persuasive (CR1)	-0.03	0.10	-0.03	0.11	-0.27	0.79
Modest (CR4)	-0.02	0.09	-0.01	0.08	-0.18	0.86
Sociable (CR6)	0.07	0.09	0.06	0.09	0.74	0.46
Analytical (CT1)	0.16	0.11	0.17	0.12	1.47	0.14
Innovative (CT2)	0.04	0.11	0.04	0.11	0.39	0.70

5.3.3 Regression for dependent variable: Communicating Orally

For Communicating Orally (P3), Persuasive (CR1), Empathic (CR3) and Sociable (CR6) from CCSQ7.2 and Basic Checking (CP7.1) and Audio Checking (CP8.1) were entered as the independent variables. As presented in Table 28, a multiple correlation of $R=0.35$ was obtained which is a moderate effect size. It explained 12 percent of the total variance.

**TABLE 28. REGRESSION SUMMARY FOR DEPENDENT VARIABLE:
COMMUNICATING ORALLY**

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.35					
R-squared	0.12					
Adjusted R-squared	0.09					
Standard Error of Estimate	6.09					
F(5,134)=3.66, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t134)	p-LEVEL
Intercept			32.08	5.48	5.85	0.00
Persuasive (CR1)	-0.04	0.09	-0.04	0.09	-0.48	0.63
Empathic (CR3)	-0.09	0.08	-0.08	0.08	-1.06	0.29
Sociable (CR6)	0.08	0.09	0.07	0.08	0.87	0.39
Basic Checking (CP7.1)	-0.02	0.11	-0.01	0.07	-0.17	0.86
Audio Checking (CP8.1)	0.35	0.11	0.26	0.08	3.21	0.00

5.3.4 Regression for dependent variable: Quality Orientation

It was hypothesised that Quality Orientation (D1) correlates positively with Analytical (CT1), Structured (CT4), Detail Conscious (CT5), Conscientious (CT6), Results Oriented (CE3), Basic Checking (CP7.1) and Audio Checking (CP8.1). As reported in Table 29, a multiple correlation of R=0.52 was obtained for Quality Orientation (D1) which is a strong effect size. It explained 27 percent of the total variance.

TABLE 29. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: QUALITY ORIENTATION

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.52					
R-squared	0.27					
Adjusted R-squared	0.23					
Standard Error of Estimate	7.68					
F(7,132)=6.85, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t132)	p-LEVEL
Intercept			3.40	7.35	0.46	0.64
Results Oriented (CE3)	0.31	0.09	0.56	0.16	3.63	0.00
Analytical (CT1)	-0.22	0.10	-0.34	0.15	-2.28	0.02
Structured (CT4)	0.28	0.10	0.42	0.15	2.83	0.01
Detail Conscious (CT5)	0.01	0.10	0.02	0.21	0.11	0.91
Conscientious (CT6)	0.01	0.09	0.02	0.15	0.15	0.88
Basic Checking (CP7.1)	0.07	0.10	0.06	0.09	0.72	0.47
Audio Checking (CP8.1)	0.21	0.10	0.22	0.10	2.11	0.04

5.3.5 Regression for dependent variable: Customer Focus

Self-Control (CR2), Empathic (CR3), Sociable (CR6), Results Oriented (CE3), Conscientious (CT6) and Energetic (CE4) from CCSQ7.2 were utilised as the independent variables in the following regression with Customer Focus (E1) being the dependent variable. As reflected in Table 30 a multiple correlation of $R=0.31$ was obtained which is a moderate effect size. It explained 9 percent of the total variance.

TABLE 30. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: CUSTOMER FOCUS

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.31					
R-squared	0.09					
Adjusted R-squared	0.05					
Standard Error of Estimate	7.26					
F(6,133)=2.30, p<0.04						
	BETA	STD.ERR.	B	STD.ERR.	(t133)	p-LEVEL
Intercept			27.48	7.22	3.81	0.00
Results Oriented (CE3)	0.26	0.09	0.40	0.15	2.75	0.01
Energetic (CE4)	-0.11	0.09	-0.13	0.11	-1.19	0.24
Self-Control (CR2)	0.22	0.09	0.22	0.09	2.40	0.02
Empathic (CR3)	0.02	0.09	0.02	0.10	0.17	0.86
Sociable (CR6)	-0.08	0.09	-0.08	0.10	-0.84	0.40
Conscientious (CT6)	-0.05	0.09	-0.07	0.14	-0.52	0.60

5.3.6 Regression for dependent variable: Team Working

It was hypothesised that Team Working (P5) correlates positively with Self-Control (CR2), Empathic (CR3), Participative (CR5), Sociable (CR6) and negatively with Competitive (CE2). For Team Working (P5) a multiple correlation of $R=0.18$ was found which is a small to moderate effect size. It explained 3 percent of the total variance as reflected in Table 31.

TABLE 31. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: TEAM WORKING

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.18					
R-squared	0.03					
Adjusted R-squared	---					
Standard Error of Estimate	6.64					
F(5,134)=0.93, p<0.46						
	BETA	STD.ERR.	B	STD.ERR.	(t134)	p-LEVEL
Intercept			32.10	5.71	5.62	0.00
Competitive (CE2)	0.07	0.09	0.06	0.07	0.85	0.40
Self-Control (CR2)	-0.05	0.09	-0.05	0.08	-0.60	0.55
Empathic (CR3)	0.01	0.09	0.01	0.09	0.14	0.89
Participative (CR5)	0.06	0.10	0.05	0.07	0.67	0.50
Sociable (CR6)	0.13	0.09	0.12	0.09	1.33	0.19

5.3.7 Regression for dependent variable: Results Driven

It was hypothesised that Results Driven (E1) correlates positively with Conscientious (CT6), Competitive (CE2), Results Oriented (CE3), Energetic (CE4), Basic Checking (CP7.1) and Audio Checking (CP8.1). As per Table 32 for Results Driven (E1) a multiple correlation of R=0.45 was obtained which is a moderate to strong effect size. It explained 21 percent of the total variance.

TABLE 32. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: RESULTS DRIVEN

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.45					
R-squared	0.21					
Adjusted R-squared	0.17					
Standard Error of Estimate	8.01					
F(6,133)=5.73, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t133)	p-LEVEL
Intercept			3.25	7.51	0.43	0.67
Competitive (CE2)	-0.10	0.09	-0.11	0.10	-1.14	0.26
Results Oriented (CE3)	0.36	0.09	0.66	0.17	4.00	0.00
Energetic (CE4)	0.03	0.08	0.04	0.12	0.34	0.74
Conscientious (CT6)	0.00	0.08	0.00	0.14	-0.03	0.98
Basic Checking (CP7.1)	0.11	0.10	0.10	0.09	1.09	0.28
Audio Checking (CP8.1)	0.16	0.10	0.17	0.11	1.55	0.12

5.3.8 Regression for dependent variable: Fact Finding

As per Table 33, it was hypothesised that Fact Finding (I1) correlates positively with Analytical (CT1), Structured (CT4), Detail Conscious (CT5), Conscientious (CT6), Results Oriented (CE3), Basic Checking (CP7.1) and Audio Checking (CP8.1). For Fact Finding (I1) a multiple correlation of $R=0.50$ was obtained which is a strong effect size. It explained 25 percent of the total variance.

TABLE 33. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: FACT FINDING

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.50					
R-squared	0.25					
Adjusted R-squared	0.21					
Standard Error of Estimate	5.78					
F(7,132)=6.30, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t132)	p-LEVEL
Intercept			14.17	5.53	2.56	0.01
Results Oriented (CE3)	0.03	0.09	0.04	0.12	0.37	0.71
Analytical (CT1)	0.03	0.10	0.03	0.11	0.28	0.78
Structured (CT4)	0.32	0.10	0.35	0.11	3.14	0.00
Detail Conscious (CT5)	-0.05	0.10	-0.08	0.15	-0.49	0.63
Conscientious (CT6)	-0.08	0.09	-0.10	0.11	-0.87	0.39
Basic Checking (CP7.1)	0.12	0.10	0.07	0.06	1.16	0.25
Audio Checking (CP8.1)	0.29	0.10	0.22	0.08	2.90	0.00

5.3.9 Regression for dependent variable: Average Quality

For the dependent variable Average Quality, Results Oriented (CE3), Self-Control (CR2), Sociable (CR6), Analytical (CT1), Structured (CT4), Detail Conscious (CT5), Conscientious (CT6), Basic Checking (CP7.1) and Audio Checking (CP8.1) were selected as the independent variables. As presented in Table 34, the multiple correlation for Average Quality is $R=0.74$. This shows a strong relationship and explains 55 percent of the variance of the total score.

TABLE 34. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: AVERAGE QUALITY

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.74					
R-squared	0.55					
Adjusted R-squared	0.50					
Standard Error of Estimate	3.83					
F(9,96)=12.81, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t96)	p-LEVEL
Intercept			59.72	4.80	12.43	0.00
Results Oriented (CE3)	0.45	0.08	0.51	0.09	5.53	0.00
Self-Control (CR2)	0.19	0.07	0.14	0.05	2.62	0.01
Sociable (CR6)	-0.29	0.08	-0.23	0.06	-3.80	0.00
Analytical (CT1)	-0.29	0.09	-0.27	0.09	-3.13	0.00
Structured (CT4)	0.17	0.09	0.16	0.09	1.86	0.07
Detail Conscious (CT5)	0.17	0.09	0.23	0.12	1.93	0.06
Conscientious (CT6)	0.11	0.08	0.12	0.09	1.36	0.18
Basic Checking (CP7.1)	-0.05	0.09	-0.02	0.05	-0.50	0.62
Audio Checking (CP8.1)	0.38	0.09	0.24	0.06	3.99	0.00

5.3.10 Regression for dependent variable: Average Call Handling Time

As reflected in Table 35 it was hypothesised that Results Oriented (CE3), Persuasive (CR1), Sociable (CR6), Structured (CT4), Conscientious (CT6) and Basic Checking (CP7.1) and Audio Checking (CP8.1) correlate with Average Call Handling Time.

TABLE 35. REGRESSION SUMMARY FOR DEPENDENT VARIABLE: AVERAGE CALL HANDLING TIME

ANALYSIS OF VARIANCE						
Multiple correlation (R)	0.49					
R-squared	0.24					
Adjusted R-squared	0.20					
Standard Error of Estimate	3.56					
F(7,130)=6.01, p<0.00						
	BETA	STD.ERR.	B	STD.ERR.	(t130)	p-LEVEL
Intercept			34.87	3.40	10.26	0.00
Results Oriented (CE3)	-0.34	0.09	-0.29	0.07	-3.87	0.00
Persuasive (CR1)	0.23	0.08	0.15	0.06	2.68	0.01
Sociable (CR6)	0.19	0.09	0.11	0.05	2.17	0.03
Structured (CT4)	0.10	0.09	0.07	0.06	1.04	0.30
Conscientious (CT6)	-0.09	0.09	-0.07	0.07	-1.02	0.31
Basic Checking (CP7.1)	-0.16	0.10	-0.06	0.04	-1.52	0.13
Audio Checking (CP8.1)	-0.07	0.10	-0.03	0.05	-0.67	0.50

As per Table 35, a multiple correlation of $R=0.49$ was obtained for Average Call Handling Time which is a strong effect size. It explained 24 percent of the total variance.

5.4 INTEGRATION OF RESULTS

The statistical results for the research are presented in Sections 5.1 to 5.3. In this section, the results will be integrated and discussed. The main purpose of the research was to determine if a test battery could assist in predicting job performance. The purpose of the research will guide the discussion of results and the focus will therefore be on identifying if a relationship exists between the predictors and the criteria.

5.4.1 The personality predictor

The findings of the research support evidence presented in Chapter 2 of the literature review (Section 2.1.2.1) that personality can be used as a predictor of performance. Small to moderate correlations were found for most of the CCCI behavioural criteria and the Customer Contact Styles Questionnaire (CCSQ7.2) scales. Results Oriented (CE3) and Structured (CT4) specifically correlated moderately with most of the CCCI behavioural criteria. This could indicate that this was the frame of reference of the Supervisors when completing the questionnaires. The possible occurrence of halo effect in the ratings should therefore be noted.

The strongest and most consistent correlations at statistically significant levels were found between the CCCI behavioural criteria and the CCSQ7.2 scales of Detail Conscious (CT5), Conscientious (CT6), Structured (CT4), Results Oriented (CE3) and Analytical (CT1). Baron et al. (1997) report a principal components analysis which showed that these specific scales loaded onto a Factor 1, Conscientiousness, along similar lines of the Big Five personality theory. The findings of the research is similar to that of Barrick and Mount's (1991) meta-analytic study in which Conscientiousness was found to be the most consistent predictor of performance.

In terms of the correlations between the personality predictor and the additional criterion data by way of Average Call Handling Time, statistically significant correlations were found for Sociable (CR6) $r=0.21$, Participative (CR5) $r=0.21$ and Persuasive (CR1) $r=0.24$. A negative statistically significant correlation was also found between Results Oriented (CE3) and Average Call Handling Time at $r=-0.23$. Results Oriented (CE3) relates to the extent to which an individual sets high and challenging personal goals (SHL, 2000b). Due to the nature of the operator job and performance and a need to keep calls shorter, a negative relationship between Results Oriented (CE3) and Average Call Handling Time is to be expected.

Statistically significant correlations were found between the Customer Contact Styles Questionnaire (CCSQ7.2) and Average Quality on the scales of Sociable (CR6) $r=-0.21$, Detail Conscious (CT5) $r=0.28$, Conscientious (CT6) $r=0.35$, Structured (CT4) $r=0.38$ and Results Oriented (CE3) $r=0.42$. The moderate to strong correlations found between Average Quality and Results Oriented (CE3), Structured (CT4), Detail Conscious (CT5), and Conscientious (CT6) are of interest. Quality (as detailed in Section 4.6, Table 6) is defined by the organisation as a measure of operator accuracy, professionalism and courtesy. The highlighted CCSQ7.2 scales with which the average quality measure correlates relate to setting high standards (Results Oriented), the prioritisation of tasks (Structured), needing to be accurate (Detail Conscious) and the extent to which the individual perseveres to complete a task (Conscientious). The link between these scales and the definition of quality in terms of being accurate and professional is evident and could assist in explaining these strong correlations.

Based on the above findings the first hypothesis "There is a significant relationship between the personality questionnaire raw scores and job performance" is accepted.

5.4.2 The ability tests predictor

The literature review in Chapter 2 (Section 2.1.2.1) highlighted that ability tests have long been accepted as predictors of performance. The results of the research confirm

this position. In terms of the ability tests in general moderate statistically significant correlations were found between the CCCI behavioural criteria and Basic Checking (CP7.1). The strongest correlation was found with Fact Finding (I1) with $r=0.34$ ($p\leq 0.01$). Moderate statistically significant correlations were also found between the CCCI behavioural criteria and Audio Checking (CP8.1). Again, Fact Finding (I1) showed the strongest correlation with a correlation coefficient of $r=0.39$ ($p\leq 0.01$). Fact Finding (I1) as a competency from the CCCI relates to knowing where to find relevant information; checking facts and data; and retrieving and absorbing information quickly (Baron et al., 1997). Given this definition, the nature of the job and the measurement properties of the ability tests, this correlation is to be expected.

The correlations found in the research are acceptable and stronger than those reported in a validation study for the selection of air traffic controllers. In this study (SHL, 2004) average correlation of ability tests to criteria showed small to moderate correlations to performance as measured by a criterion questionnaire. The Basic Checking test (CP7.1) reported a correlation of $r=0.14$ whilst the Audio Checking test (CP8.1) reported a correlation of $r=0.26$.

In terms of the correlations between the ability tests and performance data, a moderate negative correlation was found with Average Call Handling Time and Basic Checking (CP7.1), $r=-0.27$ ($p\leq 0.01$). A moderate negative correlation was also found with Average Call Handling Time and Audio Checking (CP8.1), $r=-0.26$ ($p\leq 0.01$). Correlations for abilities are rarely found to be negative. In situations where this occurs it is typically due to the nature of the measurement, for example the correlation of a time and amount measure (Anastasi, 1988). The negative correlations between Average Call Handling Time and the ability tests are to be expected due to the measurement properties of the two measures. The ability tests measure checking ability whilst Average Call Handling Time provides an indication of the operator's average time on a call. Operators are required to keep calls as short as possible and therefore it is explainable that the better an operator's checking ability in looking up numbers and details, the shorter their call handling time.

Average Quality correlated moderately with the two ability tests at statistically significant levels with correlations of $r=0.28$ for Basic Checking (CP7.1) and $r=0.39$ for Audio Checking (CP8.1) being reported.

Based on the above findings, the second hypothesis, "There is a significant relationship between the ability test raw scores and job performance" is accepted.

5.4.3 The test battery

In considering the results of the multiple regression analyses it is evident that both personality and ability work together and correlate with job performance. Multiple correlations with a strong effect size were shown for Quality Orientation (D1) $R=0.52$ ($p\leq 0.01$) and Fact Finding (I1) $R=0.50$, $p\leq 0.01$ when a combination of personality scales and ability tests were used as the independent variables as hypothesised. For the additional criterion data, multiple correlations with a strong effect size were also reported with $R=0.49$ ($p\leq 0.01$) for Average Call Handling Time and $R=0.74$ ($p\leq 0.01$) for Average Quality. Once again a combination of personality scales from the CCSQ7.2 and the ability tests (CP7.1 and CP8.1) were used to obtain these correlation coefficients.

Based on these findings the third hypothesis of the research, "There is a significant relationship between the test battery and job performance" is accepted.

5.4.4 Extraneous variable effect

The extraneous variables of race, gender, age, education level, length of service and time in current position were considered in the research to determine if they presented any moderating effect. As reported in Section 5.2.2.3 correlations and partial correlations were calculated to this end. Very little effect was shown in these statistical analyses and the variables were therefore not considered in the regression analyses.

REMARK

In concluding this chapter, the results of the research have been reported on and the specific aims of the empirical study as detailed in Section 1.3.2 have been met.

5.5 CHAPTER SUMMARY

This chapter presented the research results and provided an interpretation and discussion thereof. The results obtained and reported on in the statistical analyses enabled the fulfilment of the research objectives. Chapter 6 that follows will present conclusions that can be made. Limitations and recommendations will be discussed.

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter a summarised interpretation of the empirical study and the research results is provided. Conclusions that can be drawn from these findings are presented. The chapter highlights limitations of the research and concludes with recommendations for future research purposes.

6.1 INTERPRETATION OF RESEARCH RESULTS

The primary objective of the research was to validate a test battery for the selection of call centre operators within a communications company. The aim from a literature perspective was to conceptualise relevant concepts and to provide a context which enabled an understanding of the research as well as the dependent and independent variable measures. From an empirical view the research aimed to determine the correlations between the Customer Contact Styles Questionnaire Version 7.2 (CCSQ7.2), the Basic Checking (CP7.1) and Audio Checking (CP8.1) raw test scores and operator job performance.

In line with the research aims, a concurrent validation study was conducted correlating operator test scores on Customer Contact Styles Questionnaire (CCSQ7.2), the Basic Checking (CP7.1) and Audio Checking (CP8.1) ability tests with soft and hard measures of performance. The Customer Contact Competency Inventory (CCCI) was utilised as the soft measure of performance with supervisors assessing operator performance for the research sample. Additional criterion data by way of two operator performance statistics, namely Average Call Handling Time and Quality were included. Average Call Handling Time served as the hard measure of performance in the research.

Internal reliability of the instruments was calculated to check for internal consistency. The reliability scales of the independent variables, namely Customer Contact Styles

Questionnaire (CCSQ7.2) and the Basic Checking (CP7.1) and Audio Checking (CP8.1) tests were satisfactory and in line with reported instrument properties. Intercorrelations were then calculated within each of the instruments to check that no duplication of scales was present. Intercorrelations were acceptable with slightly stronger correlations found for the dependent variable measure, namely the Customer Contact Competency Inventory (CCCI).

Correlations were calculated between the predictors and the criteria and the predictors and the additional criterion data. Statistically significant correlations were found between the personality predictors and criteria and additional criterion data as follows:

- Small to moderate correlations were found for most of the CCCI behavioural criteria and the CCSQ7.2 scales. Results Oriented (CE3) and Structured (CT4) specifically correlated moderately with most of the CCCI behavioural criteria.
- Small to moderate statistically significant correlations were found between Average Call Handling Time and Sociable (CR6) $r=0.21$, Participative (CR5) $r=0.21$ and Persuasive (CR1) $r=0.24$. A negative statistically significant correlation was also found between Results Oriented (CE3) and Average Call Handling Time at $r=-0.23$ as expected.
- Moderate to strong statistically significant correlations were found between the Customer Contact Styles Questionnaire (CCSQ7.2) and Average Quality on the scales of Sociable (CR6) $r=-0.21$, Detail Conscious (CT5) $r=0.28$, Conscientious (CT6) $r=0.35$, Structured (CT4) $r=0.38$ and Results Oriented (CE3) $r=0.42$.

As a result of the reported correlations, the first research hypothesis, "There is a significant relationship between the personality questionnaire raw scores and job performance" was accepted.

Moderate statistically significant correlations were found between the ability test predictors, criteria and additional criterion data. Main findings of this predictor are highlighted as follows:

- Moderate statistically significant correlations were found between the CCCI behavioural criteria and Basic Checking (CP7.1). The strongest correlation was found with Fact Finding (I1) with $r=0.34$ ($p\leq 0.01$).
- Moderate statistically significant correlations were found between the CCCI behavioural criteria and Audio Checking (CP8.1). Fact Finding (I1) showed the strongest correlation with a correlation coefficient of $r=0.39$ ($p\leq 0.01$).
- A moderate negative correlation (as anticipated) was found with Average Call Handling Time and Basic Checking (CP7.1), $r=-0.27$ ($p\leq 0.01$).
- A moderate negative correlation was found with Average Call Handling Time and Audio Checking (CP8.1), $r=-0.26$ ($p\leq 0.01$), as expected.
- Moderate correlations were found for Quality and the two ability tests at statistically significant levels. Basic Checking (CP7.1) and Quality reported a correlation of $r=0.28$, $p\leq 0.01$ whilst $r=0.39$, $p\leq 0.01$ was reported for Audio Checking (CP8.1) and Quality.

As a result of the reported correlations the second research hypothesis, "There is a significant relationship between the ability test raw scores and job performance" was accepted.

The extraneous variables of race, gender, age, education level, length of service and time in current position were considered in the research to determine their moderating effect. Correlations were calculated and reported on between the biographic data and the criterion data. Race (to a lesser extent), years' service and age correlated significantly. As a result of these significant correlations partial correlations were calculated to determine the relationship between the predictors and criteria with the effect of race, years' service and age removed. Correlations were then once again calculated with age and years' service and then with race, age and years' service partialled. The correlations changed very little. These variables were therefore not considered in the regression analyses that followed.

Hypotheses were formulated for the Extreme and High Importance competencies as per the job analysis. The hypotheses guided the multiple regressions with scales from the Customer Contact Styles Questionnaire (CCSQ7.2) and the ability tests (Basic Checking and Audio Checking) entered as the independent variables as hypothesised. Multiple regressions showed the combined predictive power of the predictors. Multiple correlations with a strong effect size were shown for:

- Quality Orientation (D1) $R=0.52$ ($p \leq 0.01$)
- Fact Finding (I1) $R=0.50$, $p \leq 0.01$
- Average Call Handling Time $R=0.49$, $p \leq 0.01$, and
- Average Quality $R=0.74$ ($p \leq 0.01$).

As a result of the reported multiple correlations, the third hypothesis for the research, “There is a significant relationship between the test battery and job performance” was accepted.

As highlighted in the results chapter (Chapter 5) and the aforementioned research summary, a number of correlations between the criteria and predictors were found. To this end, the aim of the research was met.

6.2 CONCLUSIONS

In an increasingly competitive and turbulent market organisations are largely dependent on their people for success. Selection of the right personnel is therefore critical, more specially in a people intensive environment such as a call centre (Menday, 1996). The challenge of identifying the right people to fill call centre positions was introduced in Chapter 1. A large number of potential recruits are available in the employment market but the challenge for organisations is to identify and select those candidates that will perform effectively in the operator position.

The need to identify and select the right call centre personnel was highlighted on numerous occasions in this research. Els and De Villiers (2000, p.55) reiterate this need by indicating that “in the high-tech call centre environment, it is easy to forget that people, not technology, handle customer problems! The challenge is to appoint call centre personnel who have the personality to work with customers, the skills to let productivity boom and who are enthusiastic about their work”.

It is important for the employer and the employee that effective and accurate placement takes place. The research highlighted that the starting point in any selection process is an accurate analysis of the job. The critical issue of the inclusion of an accurate job analysis in detailing the job requirements and guiding the selection and assessment process was discussed in Chapter 2. Selection (and the assessments chosen for the selection process) should be done on the basis of the requirements of the job. Knowledge is essential on the part of the organisation in terms of what constitutes good performance, what knowledge, skills and attitudes are required and what measures would be effective in assessing these.

Assessments utilised in the selection process should be valid in terms of measuring what they intend to and within the selection decision-making process this is typically future job performance (Anastasi, 1988). The need for ongoing validation of assessment instruments was discussed in Section 2.2. Within the South African context the need to validate selection tools is more than ensuring a return on investment of the selection decision-making process but a legislated requirement through the Employment Equity Act (No. 55 of 1998).

As discussed in the latter part of Chapter 2 (Section 2.2.1.1) concurrent validity is one measure of validity. The method is by no means perfect but does provide an indication of validity. In the research a concurrent validation study approach was adopted. Performance of current call centre operators within a communications company was compared to their test performance in an attempt to determine whether the instruments in the test battery present a relationship to performance. Through validating the battery

in this manner the organisation is able to determine whether the test battery will add value to the operator selection process.

The results of the research reflect that correlations between personality and performance were small to moderate whilst those of ability and performance were moderate to strong. Even though a relatively small research sample was utilised (N=140), statistically significant results were reported. The findings support the research hypotheses and suggest that the Customer Contact Styles Questionnaire (CCSQ7.2), Basic Checking (CP7.1) and Audio Checking (CP8.1) tests would add value in assisting in the prediction of operator job performance. As a result of the research the organisation has a measure of the concurrent validity of the test battery and applicants can feel more confident knowing that the tests measure what they intend to. The research, as will be detailed in the section that follows, did possess certain limitations and it is suggested that the findings be substantiated via a predictive study, a larger sample and within alternate environments in order to aid generalisability of the research results.

Selection decision-making is a comprehensive, integrated process of gathering information about an individual in an attempt to predict future job success. The research has shown that the test battery (Customer Contact Styles Questionnaire Version 7.2, Basic Checking and Audio Checking) has a role to play as one piece of the operator selection decision-making puzzle.

6.3 LIMITATIONS OF THE RESEARCH

A number of limitations were present in the research. These limitations need to be noted and considered in interpreting the research results. The limitations of the literature and empirical study are discussed in Sections 6.3.1 and 6.3.2.

6.3.1 Limitations of the literature review

Limitations in the literature review relate largely to the absence of published journal articles dealing specifically with the criterion and predictors of the research. A librarian specialist assisted in conducting an extensive database search on the concepts of CCCI, CCSQ7.2, CP7.1 and CP8.1 but very few sources were found. Most of the literature sourced dealt with the assessment of personality and mental ability in general. Most of the studies therefore cited in the text are validation studies facilitated by SHL.

Validity studies reported on for the Customer Contact Competency Inventory (Section 4.5.3) are from an international context. This poses a potential limitation to the research in that the properties of the instrument within the local context have not been reported.

The reliability and validity of the measures of the additional criterion data (that is, the measurement of call handling time and quality) has not been confirmed and presents a further limitation.

6.3.2 Limitations of the empirical study

In terms of the empirical study only one job analysis method was utilised in determining the job competencies. This presents a potential limitation in that certain competencies may have been overlooked.

Due to time constraints and practical considerations a concurrent validity study was conducted as opposed to a predictive validity study. A concurrent validity study by design presents a number of disadvantages (Anastasi, 1988; Byars & Rue, 2006). The research data may present some contamination in that sub-standard candidates may already have been removed from the system as a result of the selection process. Alternatively, top performers may have been removed from the population by way of promotion.

Restriction of range is a further potential factor that can impact the research findings and result in misleading correlation coefficients. When dealing with a homogeneous group tests are generally poor at predicting individual differences and validity coefficients tend to be small (Cronbach, 1970). As a result of dealing with a preselected group, correlation coefficients may be lower (Shavelson, 1988). Correlation results therefore need to be interpreted with caution.

The data collection period of four weeks was not ideal but the timelines had to be negotiated with the organisation in a way which did not severely impact the supervisor's normal day-to-day job requirements. This could have influenced the frame of reference from which ratings were done. Further to the extended data collection time span, a major restructuring exercise directly impacting the supervisors was announced half way through the data collection and this too could potentially have influenced the response style of some of the respondents. The researcher and the HR Manager followed up with the relevant supervisors requesting them to complete their questionnaires as well as highlighting the benefits of the research so as to aid completion rates and maintain commitment and motivation.

The correlation of Results Oriented (CE3) and Structured (CT4) to almost all CCCI competencies highlighted the possible occurrence of halo effect when ratings were completed. The possible occurrence of rater effect as reported in the discussion of the research results and findings is therefore noted as a potential limitation.

Generalisability of the research findings was affected in a number of ways. In terms of the data processing regression weightings can vary depending on the sample. This impacts the generalisability of the findings to other samples (Anastasi, 1988). Cross validation of the results to a new sample is therefore needed. The research was further conducted specifically within an inbound call centre in a communications company. Generalisability of the research results to other environments, industries and types of call centres is therefore impacted.

6.4 RECOMMENDATIONS FOR FUTURE RESEARCH

The potential disadvantages of a concurrent validation study have been presented in the research limitations above. It would be of value to repeat the research from a predictive validity perspective. This would further be beneficial with a larger research sample.

It should always be remembered that test results represent only one source of information and should be utilised carefully and professionally (Foxcroft & Roodt, 2001). It would therefore be of value to conduct further, more comprehensive validation studies including other aspects of the selection battery in an effort to improve the end-to-end process.

The research was conducted for an inbound call centre. Outbound call centres are becoming increasingly evident in the market. It would be of interest and value to conduct a similar research within an outbound call centre where there is a greater emphasis on selling or marketing products.

In terms of gaining an additional perspective to the current research, it would be of interest to repeat the research utilising the Customer Contact Competency Inventory (CCCI) as the dependent variable but on a 360 degree basis. The inclusion of additional hard measures of operator job performance would further be of value.

6.5 CHAPTER SUMMARY

In this chapter main findings of the research were summarised and discussed. Limitations of the research were highlighted and recommendations for future research going forward were suggested.

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JOB PROFILE – OPERATOR

(Extract from Operator: Operator Services Job Profile)*

Job Title : Operator: Operator Services
Department : Consumer Markets
Reports to : Operations Manager
Personnel supervised : 0
Industry sector : Transport and communications

Job main purpose : To handle all manual collect calls or directory enquiries for customers

Job objectives :

- To be available to meet customer demands.
- To meet the customer needs with utmost accuracy every time.
- To provide an excellent customer service.
- To provide this service in the shortest possible time.
- To enhance revenue.

Knowledge requirements:

- Basic knowledge of computer hardware.
- Basic knowledge of South African geography.
- Knowledge of company policies and procedures.
- Customer care.

Skill requirements :

- Typing skills.
- Customer handling skills.
- Communication skills.

- Active listening skills.
- Good memory skills.

Experience :

- 12 months minimum.

Education :

- Grade 12.

CUSTOMER CONTACT STYLES QUESTIONNAIRE SCALE DESCRIPTIONS

SCALE	DESCRIPTION
Relationships with people	
Persuasive (CR1)	The extent to which the individual enjoys selling, negotiating and convincing others.
Self-Control (CR2)	The extent to which the individual shows irritation and/or annoyance and how patient they remain in their dealings with others.
Empathic (CR3)	The extent to which the individual is sensitive and understanding towards others' needs and reactions.
Modest (CR4)	The extent to which the individual is reserved about their achievements and their tendency to play down successes as opposed to showing off.
Participative (CR5)	The extent to which the individual enjoys working in a team and on co-operative tasks and activities.
Sociable (CR6)	The extent to which the individual is confident and comfortable in a range of social situations.
Thinking style	
Analytical (CT1)	The extent to which the individual enjoys working with data, facts and information to solve problems.
Innovative (CT2)	The extent to which the individual is imaginative and creative and to which they produce new and unusual ideas and solutions.
Flexible (CT3)	The extent to which the individual is open to new ways of doing things and their readiness to adapt to change.
Structured (CT4)	The extent to which the individual plans ahead, and

	prioritises and structures their tasks.
Detail Conscious (CT5)	The extent to which individuals want to be accurate, neat, and tidy in their work.
Conscientious (CT6)	The extent to which the individual is willing to persevere and stick to deadlines and finish assigned tasks.
Emotions	
Resilience (CE1)	The extent to which the individual can cope with pressure and stressful situations whilst still remaining calm and cheerful.
Competitive (CE2)	The extent to which the individual feels that they have to win at all costs.
Results Oriented (CE3)	The extent to which the individual sets high personal targets and to which they are challenged by goals.
Energetic (CE4)	The extent to which the individual enjoys being active and sustains high energy levels over a lengthy period of time.
Consistency (CCO)	The extent to which the individual has answered consistently across the entire questionnaire.

(Source: SHL, 2000b).

CUSTOMER CONTACT COMPETENCY INVENTORY DEFINITIONS

COMPETENCY	DEFINITION
People focus	
Relating to Customers (P1)	Quickly builds rapport and easily establishes relationships with customers. Relates well to different types of customers and gets on with them.
Convincing (P2)	Presents the key points of an argument persuasively. Negotiates and convinces others. Changes people's views and their decisions.
Communicating Orally (P3)	Speaks confidently and fluently. Talks at a suitable pace and level. Holds others' attention when speaking.
Communicating in Writing (P4)	Writes fluently, clearly and concisely. Adapts own written communication style to suit others.
Team Working (P5)	Develops effective and supportive relationships with colleagues. Is considerate towards them and creates a sense of team spirit.
Information handling	
Fact Finding (I1)	Knows where to find relevant information. Checks facts and data. Retrieves and absorbs information quickly.
Problem Solving (I2)	Identifies potential difficulties. Generates workable solutions and makes rational judgements.
Business Awareness (I3)	Is aware of competitor activity and business trends. Is profit conscious and appreciates the commercial impact of own work on profits.
Specialist Knowledge (I4)	Has background knowledge and a thorough grasp of products and services. Has expertise in own areas.
Dependability	

Quality Orientation (D1)	Provides a quality service. Maintains high professional standards and gets work right first time.
Organisation (D2)	Organises own time effectively and creates own work schedules. Prioritises and prepares in advance. Sets realistic timescales.
Reliability (D3)	Is reliable; follows direction from supervisors and respects policies and procedures. Shows commitment to the organisation and task completion.
Energy	
Customer Focus (E1)	Puts customers first and is eager to please them. Works hard to meet customer needs and looks after their interests.
Resilient (E2)	Remains calm and self-controlled under pressure. Reacts well to change and stays positive despite setbacks. Keeps difficulties in perspective.
Results Driven (E3)	Works long hours to achieve goals. Willingly tackles demanding tasks. Sets and exceeds challenging personal targets.
Using Initiative (E4)	Takes responsibility for own actions and makes decisions without referring to others. Acts on own initiative.

(Source: Baron, Hill, Janman & Schmidt, 1997)

RATER BRIEFING DOCUMENT

RESEARCH PROJECT

RATER TRAINING

<u>CONTENTS</u>	<u>PAGE</u>
1. MESSAGE TO THE TEAM LEADS	1
2. BACKGROUND TO THE RESEARCH PROJECT	2
3. INTRODUCTION TO THE QUESTIONNAIRE	3
4. STEP-BY-STEP COMPLETION GUIDE	4
5. POTENTIAL SOURCES OF ERROR WHEN RATING	9
6. WHERE TO GET ASSISTANCE	11
7. NEXT STEPS & TIMELINES	11
8. THINGS TO REMEMBER	11

1. MESSAGE TO THE TEAM LEADS

Dear Team Leads

As Team Leads in the Operator Services environment you are in a position where you are required to supervise and evaluate the performance of your Operators on a daily basis. This is an important role and one which requires experience, skill and insight, not only into human behaviour but in call centre performance requirements too.

This skill is required to assist in the successful execution of a research study. The study is a requirement of my part-time studies and all responses and inputs will be treated with the strictest of confidence.

Without you, my study would not be possible. Your input and co-operation will therefore be received with the greatest gratitude.

Kind regards

Michelle Nicholls

2. BACKGROUND TO THE RESEARCH PROJECT

One of the requirements of postgraduate studies is that the student needs to show that they can conduct research. This research is being conducted in fulfilment of this requirement. All information and data gathered will be treated with the strictest of confidence and will be used solely for research purposes. In fact, the data processing is going to be conducted by an external company and will therefore not even be processed within the company.

The research takes the form of a validation study and a measure of the current performance of a sample of Operators is needed. You will be requested to complete a questionnaire relating to performance for some of your Operators. This questionnaire is not related to the company's internal performance management system at all and the inputs will not be fed back to performers or promoters. The data will be used purely for the research project. The quality of the information gathered will however have direct bearing on the research outcomes.

By gathering data on the performance of a sample of Operators, the researcher will attempt to statistically determine whether assessment scores are relevant and predictive.

3. INTRODUCTION TO THE QUESTIONNAIRE

The questionnaire was designed by SHL as a means to evaluate the performance of employees. The questionnaire is made up of 128 statements and each statement is rated using a five-point scale (Hardly ever, Seldom, Sometimes, Often, Nearly Always). The statements are designed to assess the competencies that are required of the candidate to ensure success on the job.

The questionnaire is accessed and completed electronically (online). Each Operator in the study sample needs to be assessed on a separate questionnaire.

How to complete the questionnaire

- Statements are presented in groups of four.
- You will need to rate the specific Operator on a series of statements – you will need to decide which of the options is most accurate in describing the person.
- You do this by clicking on the option (eg. Nearly Always).
- You can change an option by merely click on another option. (eg. Seldom).
- Once you have rated the four statements, you will also need to select which statement is most like the individual and least like the individual. You will select these by clicking on “Most” for one of the statements and “Least” for another one of the statements.

4. STEP-BY-STEP COMPLETION GUIDE

1. Access the questionnaire with the user name and password that you will receive in an email from SHL
2. Complete the background information on yourself as the rater as well as the details of the Operator to be assessed. (This information is necessary for statistical reporting and will be treated completely confidentially. Individual details will not be used in the study.)
3. Respond to all 48 items in Section 1.
4. Complete Section 2 thoroughly.

Specific details and copies of screen views of the questionnaire will be shared below for your information:

An example of the introductory email that you will receive with your user name and password is reflected below:

Dear Testing Two Dude

Tersia Toerien is due to receive 360 degree performance feedback from a number of people.

As someone who works with Tersia Toerien, you have been nominated to provide ratings of Tersia Toerien's performance. Tersia Toerien will not see your individual responses, only a report showing the average of all peer responses.

To complete the questionnaire, you will need to visit the following website and use your username and password below to login to view your task list. Click on the task and you will be given full instructions on what to do. The task will be marked 'CCCI Assessment' and will take no more than 35 minutes. Any other tasks to complete will also be listed there.

Website: <http://www.shlsolutions.com/login.asp>
Username: F_Dude1
Password: *****

Please complete all tasks by: 23/03/2006

If you have any general queries relating to the use of the 360 questionnaire please contact the program co-ordinator in your organisation, or email support@shl.co.za

Thank you for your participation.

Screen 1 – Instructions

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SHL

Assessment of Tersia Toerien

Instructions
Page 1 of 37

[Options](#)
[Leave Instrument](#)

To view help on how to use this instrument, click on the link at the bottom of the page.

Instructions

If this window does not take up the whole of your screen, click on the icon, in the top right hand corner of the window, so that you can see each page of the questionnaire on a full screen.

Introduction

This questionnaire has been specifically designed to enable the collection of various people's views about the person named in relation to their preferred style of behaviour in the workplace. There are no right and wrong answers.

You will be asked to rate the behaviour at work of the person named in terms of a series of statements or phrases set out in groups of four. This might be yourself or someone well known to you.

The questionnaire consists of 128 statements and there is no time limit. **Allowing for instructions, this session should last for no more than 35 minutes.**

[Help](#)

Next

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Screen 2 – Instructions Continued

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Assessment of Tersia Toerien

Instructions
Page 2 of 37

[Options](#)
[Leave Instrument](#)

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Instructions

	Least	Most
Enjoys promoting ideas	<input type="radio"/>	<input type="radio"/>
Stays calm	<input type="radio"/>	<input type="radio"/>
Draws accurate conclusions	<input type="radio"/>	<input type="radio"/>
Writes clearly	<input type="radio"/>	<input type="radio"/>

Hardly ever Seldom Sometimes Often Nearly always

Simply click the option which best represents your rating, i.e. the more the behaviour fits, the further to the right you should choose your answer option. If you want to change your answer, just click on a different option. In the above example, the rater has indicated that the participant *nearly always* "Stays calm" and *often* "Draws accurate conclusions". The rater feels, however, that the participant *hardly ever* "Enjoys promoting ideas" or "Writes clearly".

When you have rated the four statements you need to decide which of these statements is *most true* and which is *least true* in describing the participant as a manager. In the example the rater has indicated that "Stays calm" is *most true* and that "Enjoys promoting ideas" is *least true* of the participant.

If you require help at any stage, click on the 'help' link at the bottom of each page. Please click on 'NEXT' to proceed to example questions.

[Previous](#) [Help](#) **Next**

Screen 3 – Example

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Assessment of Tersia Toerien

Example
Page 3 of 37 → [Leave Instrument](#)

To view help on how to use this instrument, click on the link at the bottom of the page.

The individual named above is the sort of person who...

Enjoys promoting ideas

Stays calm

Draws accurate conclusions

Writes clearly

Least Most

Previous Help Next

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Screen 4 –Instructions completion

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Assessment of Tersia Toerien

Instructions
Page 4 of 37 → [Leave Instrument](#)

To view help on how to use this instrument, click on the link at the bottom of the page.

Remember

Be as **objective** and **honest** as you can. Do not give a response because it is how the participant you are rating would like to be seen. There are no right or wrong answers – just complete your answers as accurately as possible to describe how the person named would typically behave in a normal or day to day work setting.

As the questionnaire is used to assist with development planning, please use the full range of the scale (as appropriate), to maximise the value of the feedback to the person you are rating.

At times you may find it difficult to make a judgement because you can think of exceptions when the behaviour was not typical of the participant you are rating. In these cases, please respond by indicating the most usual action or behaviour.

Ensure you rate **all** statements.

Although there is no time limit, you should work as quickly as you can rather than pondering at length over any one statement. You have to rate all 128 statements.

The information is encrypted to ensure that all responses provided remain confidential.

Please note, your responses will only be used to provide feedback to the person you are rating and for purposes of identifying anonymised aggregate comparison data.

Make yourself comfortable and click on the 'Next' arrow when you are ready to proceed.

Previous Help Next

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Screen 5 – 1st question screen

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Assessment of **Tersia Toerien**

The individual named above is the sort of person who...

Page 5 of 37
[Leave Instrument](#)

Options

Least Most

Is an authority on own products

Is effective in planning and organising

Puts the customer first

Communicates articulately

Previous Help Next

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Screen 6 – Final screen

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SHL

Assessment of **Tersia Toerien**

Page 37 of 37
[Leave Instrument](#)

Options

Thank you for taking the time to complete this questionnaire.

If you do not wish to change any of your responses, please click on the 'finish' arrow below right. Note that once you click the finish button, the questionnaire will be saved and no further changes will be able to be made.

Previous Help Finish

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REMEMBER:

- Please click on the “Finish” arrow once you have completed all the questions.
- Please rate each statement independently.
- Avoid using one overall impression.
- Avoid rating all employees either high or low.
- Avoid the middle response (3) as much as possible. Try to use the full five-point scale.
- To get the most value, please respond honestly and frankly. Confidentiality is guaranteed.

5. POTENTIAL SOURCES OF ERROR WHEN RATING

The following potential sources of error are often experienced when one is asked to rate performance. These potential sources of error will be pointed out to you. Please try to avoid these errors when doing the performance ratings.

- **Halo Effect**

Here the tendency is to generalise one aspect of good performance to all performance. For example, a Team Lead may rate an Operator as outstanding on all criteria when they are particularly impressed by only one or two things that they have done in their job. Likewise, a few bad habits, such as poor attendance, may result in a Team Lead evaluating an Operator negatively across the board.

This error is best overcome by rating candidates on one statement at a time – try to focus all attention on the statement being rated at that point in time.

- **Central Tendency**

Here the tendency is to give "middle of the road" evaluations as this is easier than having to justify high or low scores. In this instance, Team Leads may find it difficult and unpleasant to evaluate some Operators higher or lower than others, even though performances may reflect a real difference.

This error is best overcome by giving your real and honest impression of the Operator on the statement being rated at the time.

- **Level of strictness**

Here the tendency is to generally respond in a favourable or unfavourable fashion across all candidates. When Team Leads are less strict in their evaluation, an Operator's rating may be higher than it actually should be. Similarly, a higher level of strictness gives the candidate a lower evaluation than deserved.

This error is best overcome by basing one's ratings on actual observed performance evidence of an Operator, that is, when rating a statement, linking it back to a practical example.

- **First Impressions and last impressions**

Here, the first impression error occurs when a Team Lead evaluates a candidate on the basis of judgements made after an initial meeting. The Team Lead can therefore be influenced by initial impressions and disregard subsequent contrary evidence. The last impression error is committed when the Team Lead is most influenced by the last observations made. Here there is disregard of earlier contrary evidence. For example, a Team Lead may have had an argument with an Operator and thus rates the person poorly because this was the last impression that they made.

This error is best overcome by basing one's ratings on actual observed performance evidence of a candidate. In other words, consider practical examples when rating a statement.

- **Similar to me error**

Here, the tendency is on the part of the Team Lead to judge more favourably those he or she sees as similar to himself or herself. That is, the more closely an Operator resembles the Team Lead in personality, attitude or background, the stronger the tendency of the Team Lead to judge that candidate higher.

This error is best overcome by not comparing the candidate to yourself but evaluating the candidate on his or her actual performance.

6. WHERE TO GET ASSISTANCE

Contact Michelle Nicholls on telephone: 041 3955122 or eEmail nicholm2@telkom.co.za, alternatively you can email SHL at support@shl.co.za

7. NEXT STEPS & TIMELINES

ACTIVITY	TIMELINES
Briefing of Team Leads	3 to 13 April 2006
Team leads to complete questionnaires week 1	18 to 21 April 2006
Team leads to complete questionnaires week 2	24 to 28 April 2006
Team leads to complete questionnaires week 3	2 to 5 May 2006
Team leads to complete questionnaires week 4	8 to 12 May 2006

8. THINGS TO REMEMBER

- It is critical that you complete all questionnaires mailed to you
- Questionnaires need to be completed in the week of receipt
- Questionnaire will be sent out over a 4-week period
- Questionnaires will take just over 30 minutes to complete
- It is critical that you stick to the research timelines outlined above
- A Team Lead will complete a max. of 12 questionnaires in total
- Please complete all questionnaires in full
- Please respond honestly and openly
- Please consider operator performance when completing questionnaires
- Please keep the potential rater errors in mind when completing the questionnaires.

INTERNAL OPERATOR QUALITY ASSESSMENT QUESTIONNAIRE

Greeting

*** PAG (Must be activate, clear and audible) Met**

** PAG (must be activate, clear and audible) In the absence of the PAG, operator to greet and announce his/her name clearly, e.g. "Good day (Name) speaking how may I help you?"*

M DNM NA

Professionalism

*** Do not cut the customer Met**

** Do not cut the customer*

M DNM NA

*** Thank customer for the assistance rendered e.g. for spelling, holding or any other additional information Met**

** Thank customer for the assistance rendered e.g. for spelling, holding or any other additional information*

M DNM NA

*** For multiple requests advise customer to hold for the next operator Met**

** For multiple requests advise customer to hold for the next operator*

M DNM NA

Accuracy

*** Repeat Key words and area Met**

** Repeat Key words and area*

M DNM NA

* Provide every customer with correct telephone number/information			Met
<i>* Provide every customer with correct telephone number/information</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
* Avoid slang words and phrasing			Met
<i>* Avoid slang words and phrasing</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
* When leaving the line or to break long silence, request the customer to hold on			Met
<i>* When leaving the line or to break long silence, request the customer to hold on</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
* Ask relevant questions			Met
<i>* Ask relevant questions</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
Courtesy			
* Active Listening			Met
<i>* Active Listening</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
* Always speaks clearly			Met
<i>* Always speaks clearly</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>
* No rushing			Met
<i>* No rushing</i>	<i>M</i>	<i>DNM</i>	<i>NA</i>

*** No interruption** **Met**

** No interruption*

M DNM NA

*** No language switching (unless the customer do so)** **Met**

** No language switching (unless the customer do so)*

M DNM NA

Closing

*** Thank you the number will follow** **Met**

** Thank you the number will follow*

M DNM NA